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| **Assessment Report** | | | |
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| **Title:** | Organisational Capability assessment of an application by NNB Generation Company (SZC) Ltd for a nuclear site licence | | |
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Table 1: Step-based document review

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| Step | Description | Role | Name | Date | Revision No.[[1]](#footnote-2) |
| 1 | Initial Draft, including identification and mark-up of SNI/CCI | Author(s) |  | 1 April 2022 | 0 |
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**Table 2: Document acceptance**

|  |  |  |  |  |  |
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| **Role** | **Name** | **Position** | **Signature** | **Date** | **CM9 reference for review** |
| Author(s) |  | Principal Inspector |  | 27 June 2022 | 2022/23095 |
| Peer Review[[2]](#footnote-3) |  | Principal Inspector |  | 03 May 2022 | 2022/21514 |
| Acceptance[[3]](#footnote-4) |  | Superintending Inspector |  | 27 June 2022 | 2022/31615 |

Table 3: Revision history

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| --- | --- | --- | --- | --- | --- |
| **Revision** | **Date** | **Author(s)** | **Reviewed By** | **Accepted By** | **Description of Change** |
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Table 4: Circulation list

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| **Organisation** | **Name** |
| ONR |  |

Sizewell C Licensing

Organisational Capability assessment of an application by NNB Generation Company (SZC) Ltd (NNB GenCo (SZC) for a Nuclear Site Licence

Assessment Report ONR-NR-AR-22-010

Issue No. 2

26 April 2023

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Executive Summary

This report presents the findings of the Organisational Capability aspects of the NNB Generation Company (SZC) Ltd (NNB GenCo (SZC)) application for a nuclear site license to construct and operate two UK EPR™ reactors at Sizewell C (SZC).

This assessment has examined the corporate body/licensee organisation structure, governance arrangements, resources, competence and training, design authority, intelligent customer capability, internal challenge, supply chain management and arrangements for procurement of high integrity long-lead items.

The assessment is based on evidence from interventions and routine Level 4 engagements into specific topics and arrangements, including key project enabling activities. It also draws on the significant cross cutting interventions carried out by the Office for Nuclear Regulation (ONR) as part of the delivery of the ONR integrated intervention plan.

Based upon the assessment, the following main points are made at the current stage of the project:

* + License Condition compliance arrangements are sufficiently developed for the activities being undertaken at this stage of the project;
  + Governance arrangements have been implemented which are proportionate for the current stage of the project;
  + Adequate arrangements have been developed and implemented for competency, training, and appointments;
  + Adequate management system arrangements, including quality management arrangements, have been developed and implemented;
  + A series of company values have been defined and they are known, understood, and being applied;
  + Suitable and sufficient organisational structures, resources, and competencies have been developed and implemented to lead and manage safety effectively;
  + Arrangements to be able to demonstrate functional intelligent customer capability have been established and tested;
  + The NNB GenCo (SZC) design authority has been established based on intelligent replication from NNB GenCo (HPC);
  + Supply chain management arrangements are in place and have been improved where necessary;
  + The organisational learning function is proportionately developed with documented arrangements for capturing learning;
  + The Independent Nuclear Assurance (INA) function is sufficiently resourced and capable of providing timely advice, which appropriately influences the organisation;
  + There are clear programmes of work to facilitate the continued development of the organisation and its arrangements prior to any step change in risk; and
  + The current shareholder agreement for the development phase of the project places control of key policies relating to safety and security with NNB Holding Company limited, rather than the licence applicant, which is inconsistent with the expectations of ONR.

Throughout the assessment process (up to the date of this report), ONR has provided advice to NNB GenCo (SZC) on preparing itself to be a nuclear site licensee. NNB GenCo (SZC) has some ongoing actions to address to respond to the advice and feedback that ONR has provided. ONR would also wish to see NNB GenCo (SZC) make enhancements in certain areas of its organisation as the company develops and matures.

Taking these factors into account, the overall judgement is NNB GenCo (SZC) has not developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder due to the constraints of the current shareholder agreement.

I recommend that from an organisational capability perspective a nuclear site licence should not be granted to NNB GenCo (SZC) to construct and operate a nuclear power station at Sizewell C.

ONR will seek ongoing confidence in the delivery of the forward action plans and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.

List Of Abbreviations

|  |  |
| --- | --- |
| AFI | Area for Improvement |
| CFO | Chief Finance Officer |
| CFSI | Counterfeit, Fraudulent and Suspect Items |
| DCO | Development Consent Order |
| DI | Direction Industrielle |
| EDF SA | Electricite de France |
| eLMS | eLearning Management System |
| EPCC | Engineering Procurement Construction and Commissioning |
| FAP | Forward Action Plan |
| FID | Final Investment Decision |
| FTE | Full-time equivalent |
| GID | Government Investment Decision |
| GQAS | General Quality Assurance Standard |
| HPC | Hinkley Point C |
| HR | Human Resources |
| HRBP | HR Business Partner |
| ICOG | Intelligent Customer Oversight Group |
| ICP | Intelligent Customer Practitioner |
| IMS | Integrated Management System |
| INA | Independent Nuclear Assurance |
| IPA | Infrastructure and Projects Authority |
| IPSA | Inter Project Service Agreement |
| IRP | IMS Review Panel |
| LR | Learning Reports |
| LTQR | Lifetime Quality Records |
| MoC | Management of Change |
| MoCC | Management of Change Committee |
| MTP | Medium Term Plan |
| NNB GenCo (SZC) | NNB Generation Company (SZC) Limited, the applicant |
| NGL | EDF Nuclear Generation Limited |
| NSA | Nuclear Skills Alliance |
| NSC | Nuclear Safety Committee |
| NSL | Nuclear Site Licence |
| OC | Organisation Capability |
| OCC | Organisation Capability Committee |
| OL | Organisational Learning |
| OLIM | Organisational Learning and Non-Conformance Management system |
| ONR | Office of Nuclear Regulation |
| OPEX | Operational Experience |
| PDO | Project Delivery Organisation |
| PPC | Project Performance Committee Meeting |
| PTOC | Project Training Oversight Committee |
| RD | Responsible Designer (a role that will be performed by a division of EDF SA) |
| RFP | Request for Proposals |
| RGP | Relevant Good Practice |
| RI | Regulatory Issue |
| ROTCC | Risk, Opportunities, Trend and Change Committee |
| RTP | Role Training Profile |
| SAPs | Safety Assessment Principles |
| SELMA | Safety & Environmental Learning Management system |
| SMP | Safety Management Prospectus |
| SQEP | Suitably Qualified and Experienced Person |
| SRM | Supplier Relationship Management |
| SZC | Sizewell C Site |
| TAG | Technical Assessment Guide |
| TIG | Technical Inspection Guide |
| TCO | Technical Client Organisation |
| TE&R | Tender Evaluation and Recommendation Form |
| ToR | Terms of Reference |
| TSO | EDF Energy (TSO) Limited |
| UK | United Kingdom |
| WANO | World Association of Nuclear Operators |

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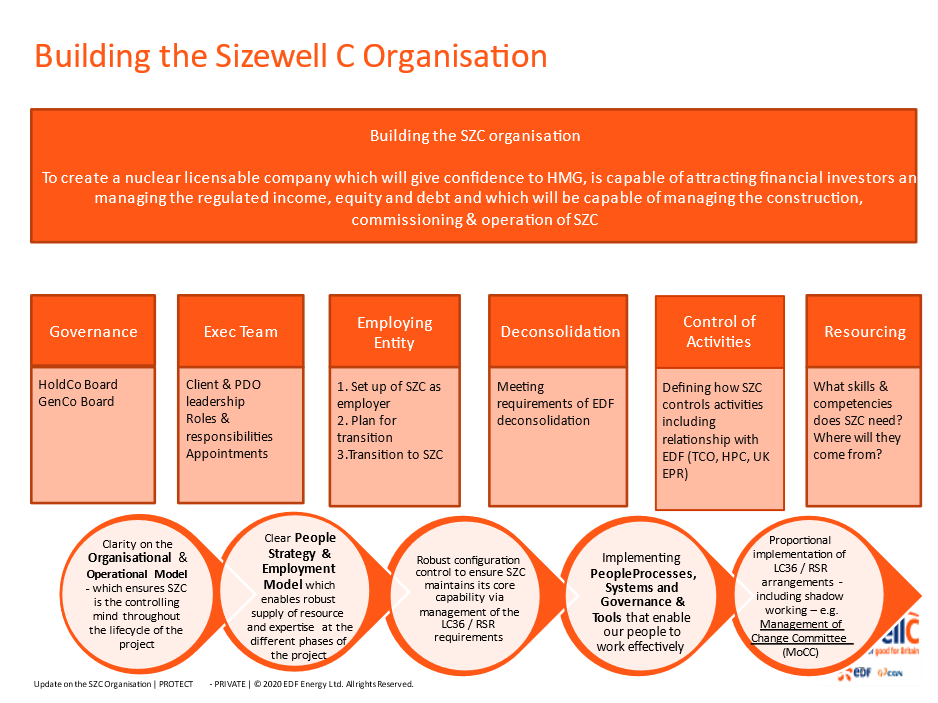
1. Introduction
   1. Background
2. On 30 June 2020, the Office for Nuclear Regulation (ONR) received an application from NNB GenCo (SZC) for a nuclear site licence (NSL) to construct and operate a twin EPR™ power station at Sizewell C (SZC) in Suffolk, adjacent to the existing Sizewell B station.
3. In addition to a NSL, before it can start construction the applicant must obtain a number of site-specific permissions from other regulators and government, including environmental permits and planning permission in the form of a development consent order (DCO) from the Secretary of State. NNB GenCo (SZC) has submitted applications for environmental permits to the Environment Agency and for a DCO to the Planning Inspectorate.
4. Should ONR decide to grant a NSL, after our assessment of the application, we will use the powers available under the site licence to require the licensee to request our permission for starting nuclear safety related construction at Sizewell C. Similarly, the licensee will be required to seek ONR’s permission to proceed to subsequent, key construction and commissioning stages up to the start of commercial operation.
5. Our assessment of the site licence application will culminate, if successful, in a recommendation to the ONR Chief Nuclear Inspector on granting the licence. Therefore, the purpose of this specific report is to present the findings of the organisational capability (OC) cornerstone assessment.
6. The overall outcome of our assessment is a project assessment report that draws together the views across ONR's relevant technical specialists on the applicant’s readiness to become a nuclear site licensee.
   1. Project / Organisational Context
7. This section aims to provide relevant context for the organisational capability aspects of NNB GenCo (SZC)’s nuclear site licence application assessment.
8. The SZC project is a ‘second of a kind build’, based on a replication of the reactors currently being constructed at Hinkley Point C (HPC). NNB GenCo (SZC)’s strategy is to replicate the design, with the exception of site-specific requirements, the majority of the established supply chain, and intelligently replicate the management arrangements.
9. There are two key terms that are relevant to this assessment, which represent stages of investment that are essential for building the capability and enabling the project to commence delivery, these are as follows.
   * Government investment decision (GID), which is the point where the UK Government may opt to invest in the project. This is relevant to this assessment because the investment enables the project to build further capability prior to any significant increase in activity. This is anticipated during 2022.
   * Project final investment decision (FID), which is the point where the main investment is expected in the project and where activity / risk will significantly increase. This is anticipated during 2024.
10. This assessment has been informed by the current activities being undertaken by the SZC project, which is focused on building the capability and arrangements required for the NSL company and establishing the enablers for investment in the project. Looking ahead; we are not anticipating any significant increase in risk in safety related activities until after FID. Supply chain activities are also not anticipated to ramp up until mid-2023. The key milestone of Jalon Zero (J0), which is the start of above ground construction of the nuclear island common raft is currently scheduled for 2028.
11. ONR recognises that the organisational capability of the project will continue to mature beyond the point of the granting of a NSL, noting that, at the time of writing, there are currently ~250 people working on the project, with a plan to increase this to ~450 by the end of 2022. For a significant project of this nature there will be an evolution of the required capability to ensure that the right people with the right skills are available at the required time. ONR will seek confidence through the forward action plans (FAP) and ongoing engagement as the project progresses.
12. The project commenced ‘shadow working’ in early 2022. Shadow working is an opportunity for the licence applicant to test the adequacy and robustness of its management arrangements as if it were operating under the constraints of a NSL, allowing it time to refine its arrangements based on learning from experience, and ONR to gain confidence in the adequacy of implementation.
13. NNB GenCo (SZC) is developing a delivery model for the project that will use a series of alliances to deliver the project, with NNB GenCo (SZC) retaining clear accountability for overseeing the project as an intelligent customer. The principles of this model are as follows.
    * NNB GenCo (SZC) will be responsible for specifying requirements, governing, enabling, assuring, and managing the integration of its suppliers and alliances. The assurance of delivery will be performed by commercial, finance, financing & economic regulation, safety, security and assurance, and human resources (HR) within the organisation.
    * Within the SZC organisation, the delivery team (known as ‘project delivery organisation’ (PDO)) will be responsible for the delivery of the project works against SZC defined requirements from design through to hand over to the operations team, managing the integration with the supply chain. The PDO itself is a matrix organisation split between two elements:
      + PDO integrator: which will have the role of control and coordination of the delivery scope through the integration of the individual programmes with all activities outside these programmes needed to deliver the project scope into operation. This includes design authority, which will own and control the safety case for construction including any changes deemed necessary throughout the life cycle of the plant; and
      + PDO programmes: The integrated engineering procurement construction and commissioning (EPCC) delivery is organised through three main programmes: civil works, nuclear island, and conventional island-balance of plant teams.
14. ONR recognises that, at the time of assessment, this delivery model is evolving and will therefore be part of future ongoing regulatory engagement. However, the foundations of this model are explored further in section 4 of this report, to inform our future regulatory footprint.
15. In compiling this report a number of specialist nuclear inspectors have conducted the assessments contained within the different sections. Their professional judgement on the adequacy of the capability and arrangements for this stage of the project are captured at the end of each section and used to inform the overall conclusion.
    1. Scope
16. Consistent with the ONR intervention strategy for licence grant, the scope of this report covers assessment of organisational capability as follows:
    * governance and assurance
    * organisational development
    * competency, training, and appointments
    * quality (including management systems)
    * safety culture
    * intelligent customer
    * design authority
    * supply chain management (including long lead items)
    * organisational learning
    * independent assurance and advice
17. This assessment report has been written to support the overall project assessment report.
    1. Methodology
18. Assessment was undertaken in accordance with the requirements of ONR’s guide NS-PER-GD-001 (Ref. 1). The ONR Safety Assessment Principles (SAPs) (Ref. 2), supporting Technical Assessment Guides (TAGs) (Ref. 3) and Technical Inspection Guides (TIGs) (Ref. 4) have been used as the basis for this assessment.
19. The methodology for the assessment follows the TAG on the mechanics of assessment within ONR (Ref. 4) and has focussed on five key areas, as follows:
    * Policies, strategies, or plans - establishing company policies, developing key strategies and development of plans for activities related to different stages of the project;
    * Organisational resources and capability - defining the resource requirements and deploying suitably qualified and experienced persons (SQEP), relevant to the area being assessed. This element can also consider the development of core software systems and tools to enable the project to be delivered safely;
    * Arrangements - the development of the management arrangements for the control of work, which includes relevant processes, procedures and working instructions;
    * Implementation of arrangements - the adequacy of implementation of the management arrangements and plans for the control of work, which should consider if the relevant arrangements have been effectively implemented, are being used and are leading to the appropriate outcomes; and
    * Verification - evidence based verification by the ONR inspector, which has been informed by NNB GenCo (SZC)’s independent nuclear assurance (INA) team, focused on assessing the adequacy of relevant outcomes;
20. The assessment has focused on ensuring that NNB GenCo (SZC) establishes an organisation that is capable of managing matters relating to nuclear safety and security, and discharging the obligations associated with holding a nuclear site licence. This capability will be comprised in arrangements covering a number of key components including the following:
    * core safety capability
    * staff employment model
    * identification of the nuclear baseline
    * intelligent customer capability
    * role and functioning of the design authority
    * internal challenge function
    * quality management arrangements
    * learning organisation
    * procurement policy and strategy
    * competence and training
    * corporate governance
21. Further detail on the areas of focus are contained within sections 2- 5 of this report.
    1. Structure of the report
22. The structure of this report is as follows:
    * The strategy adopted for the Organisational Capability is outlined in Section 2.
    * The key NNB GenCo submissions are outlined in Section 3.
    * The topic stream assessments are outlined in Sections 4.
    * The overall summary and conclusion are presented in Sections 5.
23. It is worth noting that individual specialist inspectors have led the assessment against each of the sections within the combined report. Their recommendation is captured in the relevant section, which is the basis of the overall recommendation.
24. Assessment Strategy
25. The assessment strategy for the OC cornerstone assessment is set out in this section. This identifies the scope of the assessment and the standards and criteria that have been applied. It contributes to, and is consistent with, the overall SZC Assessment Strategy and Framework (Refs. 6 and 7). The assessment has been based on the two distinct phases:
    * Licence application - 30th June 2020
      + Routine level 4 meetings used to gain insights into NNB GenCo’s (SZC) progress, providing regulatory guidance on expectations.
    * Commencement of formal shadow working – early January 2022
      + A set of targeted interventions based on the topic streams to gain confidence of the maturity of the organisation, including key documentation review, leading up to the licence grant.
    1. Standards and Criteria
26. The relevant standards and criteria adopted within this assessment are principally the SAPs (Ref. 2), internal ONR TIGs and TAGs (Ref. 3 and 4), relevant national and international standards and relevant good practice informed from existing practices adopted on UK nuclear licensed sites. The key SAPs and any relevant TAGs/TIGs are detailed within tables 6, 7 and 8. National and international standards and guidance have been referenced where appropriate within the assessment report and are listed in table 9. Relevant good practice, where applicable, has also been cited within the body of the assessment.
    * 1. Safety Assessment Principles
27. The key SAPs applied within the assessment are included within table 2 of this report.
    * 1. Technical Inspection and Assessment Guides
28. The key TAGs and TIGs applied as part of this assessment are included within tables 7 and 8 of this report.
    * 1. National and International Standards and Guidance
29. The key international standards and guidance applied as part of this assessment are included within table 9 of this report.
    1. Use of Technical Support Contractors
30. No technical support contractors have been used in this assessment.
    1. Integration with Other Assessment Topics
31. The topic streams assessed in this report form part of an integrated assessment with the following cornerstones:
    * site activities & licence compliance
    * design and safety case
    * security
    * conventional health & safety and fire safety
    * licensing & legal
32. This has included cross-cutting interventions including but not limited to intelligent customer capability and competency, and appointments.
33. Throughout the assessment process, the OC cornerstone has coordinated its assessment activities with the site activities & licence compliance and security cornerstones to ensure that the assessments undertaken were comprehensive and complimentary whilst avoiding duplication.
    1. Out of Scope Items
34. There are no out of scope items.
35. NNB Genco (SZC) Submission
36. This assessment was based on the following versions of the documents of NNB GenCo (SZC)’s NSL application dossier, some of which have been up issued during the assessment period.

**Table 5 - Relevant Document Versions for Assessment**

|  |  |  |
| --- | --- | --- |
| **Relevant Document** | **Version Assessed** | **Version at application** |
| Company Manual | 4 (Ref. 33) | 3 |
| Nuclear Baseline Statement | 2 (Ref. 38) | 1 |
| Management System Manual | 2 (Ref. 80) | 2 |
| NSL compliance matrix | 5 (Ref. 163) | 4 |

1. ONR Assessment
   1. Governance and Assurance
      1. Scope of Assessment Undertaken
2. The ONR expectations for the assessment are defined in the task sheet on governance (Ref. 7). The scope of the assessment covers the following areas:
   * business model for SZC
   * Holding Company and operating company arrangements
   * governance model through the organisation
   * leadership development & direction
   * employment model for seconded / key staff
   * holistic assurance (this section was added during the assessment period through discussions with NNB GenCo (SZC))
     1. Applicable Relevant Good Practice (RGP)
3. The key RGP in support of the assessment, includes but is not limited to the following:
   * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020
   * Licensing Nuclear Installations November 2021
   * NS-TAST-GD-104 - Corporate Governance for Nuclear Safety (includes the Wates Principles – April 2022)
   * UK Corporate Governance Code – July 2018
   * NS-TAST-GD-080 Revision 4 - Challenge Culture, Independent Challenge Capability
     1. Assessment Process and Outcomes
4. This topic stream developed a regular engagement with NNB GenCo (SZC) through level 4 meetings. In summary there were seven level 4 meetings held following the NSL application on 30th June 2020; the associated contact records are listed below and can be found in the relevant trackers (Refs. 8 and 9):
   * 26 October 2020 - ONR-NR-CR-20-597
   * 17 December 2020 - ONR-NR-CR-20-818
   * 23 February 2021 - ONR-NR-CR-21-1008
   * 22 July 2021 - ONR-NR-CR-21-227
   * 19 October 2021 - ONR-NR-CR-2-367
   * 24 November 2021 - ONR-NR-CR-21-497
   * 15 December 2021 - ONR-NR-CR-21-497
5. As part of ONR’s internal governance process, a task sheet was used as the basis for the two interventions conducted against the governance workstream. The approved intervention scope document is (Ref. 10); the first intervention was to understand the governance through the organisation and the second was a series of interviews with a selection of NNB GenCo (SZC) Board (the GenCo Board) members to assess the composition of the GenCo Board and the interactions between NNB Holding Company (SZC) Ltd. We conducted the interventions on 21 and 22 February 2022 (Ref. 12), and 9 and 10 March 2022. Both interventions were rated as adequate. However, this assessment was on the basis of ONR receiving a commitment letter from NNB GenCo (SZC) to address the shortfalls constrained by the current shareholder agreement. This letter (Ref. 13) has been received and is discussed in the body of this report.
   * + 1. Business model for SZC
6. In February 2021, ONR raised regulatory issue 8552 relating to concerns with the business model for the project and the lack of clear and consistent understanding across the executive team.
7. NNB GenCo (SZC) responded positively to the challenge presented by the regulatory issue and established a project team to address the concerns, led by the HR Director, with oversight of the Managing Director. The project was titled ‘Building the SZC organisation’, with the aim to ‘create a nuclear licensable company’, see Figure 1 below.

Figure 1 - NNB GenCo (SZC) organisation



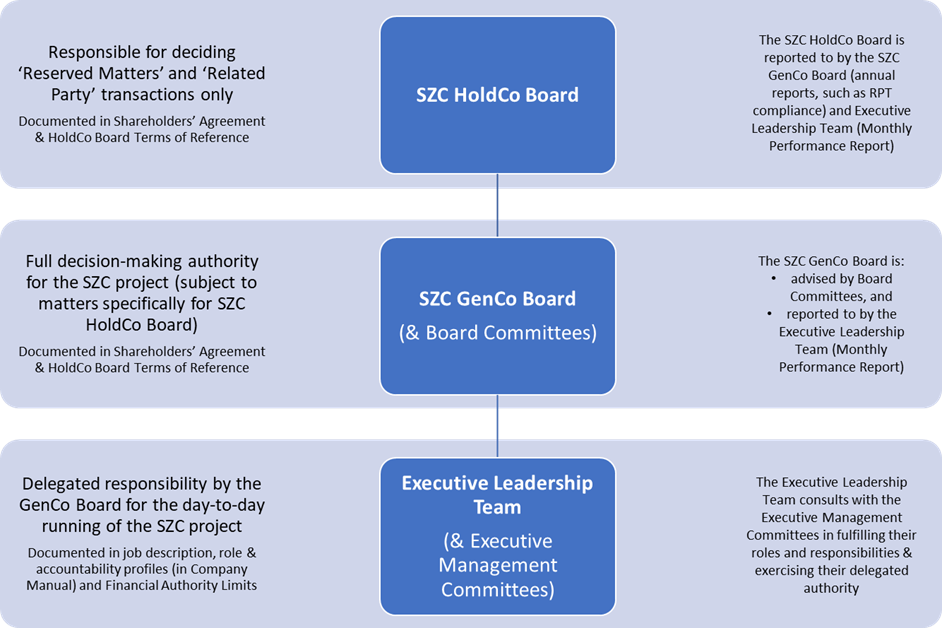
1. As part of the response, NNB GenCo (SZC) examined the composition and balance of skills of their senior team, which resulted in a strengthening of the team through recruitment of a safety and assurance director, technical director, and commercial director. The balance of skills was examined during the intervention on an individual basis as part of the review of skills mapping, this is discussed later in this section.
2. Regulatory issue 8552 was closed in July 2021, after satisfactory progress was made. Of note was a board approved paper that provided an overview of the SZC operating model (Ref. 13), which provided confidence to the regulator in the direction of travel and placed NNB GenCo (SZC) as the controlling mind over all phases of the project.
3. During the intervention on governance, the Safety and Assurance Director provided a summary of the current operating model noting the following key points:
   * NNB GenCo (SZC) will become an independent company from the EDF group at the point of FID, which is expected to be in 2024. Up until this point, the core safety capability will continue to be secured through the existing secondment arrangements, the same as HPC. However, as the SZC project deconsolidates from the EDF group, NNB GenCo (SZC) will progressively become the direct employing entity of the capability, underpinned by its own enhanced contractual arrangements;
   * NNB GenCo (SZC) will oversee the design, construction, commissioning, and operations of the project;
   * The work will be delivered through a supply chain, some of which will be through alliances, with NNB GenCo (SZC) being the intelligent customer and accountable body;
   * NNB GenCo (SZC) recognised that the current shareholder agreement is specifically for the development phase and not fit for purpose for being a nuclear site licence holder, but it is not feasible to make changes until an anticipated GID. NNB GenCo (SZC) acknowledged the need for a commitment letter to address the known issues constrained by the current shareholder agreement. The signed commitment letter was submitted to ONR in late March 2022, as referenced earlier in this section;
   * Technical services organisation (TSO) service agreement – phase 1 (Ref. 14), which secures key capability for the prospective licensee, has been recently signed between NNB GenCo (SZC) and TSO. ONR noted ‘Section 23.A’ of the agreement has a senior leader of TSO as an observer on the GenCo Board;
   * TSO service agreement – phase 2 will introduce a joint ownership model of the TSO, with initially three equal shareholders (SZC / HPC / EDF Energy Nuclear Generation Limited (NGL)). This is still under development and will not be implemented before FID;
   * Under the SZC governance framework, the custodian of replication sits with the ‘no change committee’ (chaired by the Engineering and Delivery Director). Issues may be referred to the nuclear safety committee (NSC) for advice and/or the NNB GenCo (SZC) Board;
   * Technical direction committee – which is currently part of HPC’s arrangements, has been considered for SZC. The Safety and Assurance Director has confirmed this function will be performed by the ‘no change committee’, and if detailed technical issues emerge, a technical task force will be initiated under the oversight of the ‘no change committee’;
   * The nuclear services agreement for services provided by the responsible designer (RD) and direction industrielle (DI) is under development. In the interim, a protocol is in place between the RD & DI and the SZC NI Programme on the level of surveillance and quality on long lead items;
   * The safety directorate will have a footprint on quality across all areas; and ONR declared this will be an area of ongoing interest.
4. The HR Director expanded on the importance of the work relating to the operating model, which has continued to evolve beyond the closure of the regulatory issue. A board paper (Ref. 15) was presented to the NNB GenCo (SZC) Board on 23 November 2021, that provides further clarity on the project delivery model, related governance, and lines of defence for assurance. On reviewing the paper, we are broadly content with the direction of travel, but will seek to understand the implementation of intelligent customer arrangements at a later stage, as the project moves beyond concept to implementation.
5. In summary, we are content that the business model for the SZC project has matured significantly since the NSL application was submitted. There is clear alignment across the organisation, with a good understanding of the operating model that provides the underpinning. Although there is still a lot of work to be done on implementation, the regulatory focus going forward will be on embedding the operating model. We will seek confidence, and engage where necessary, in addressing the elements within the commitment letter, and the implementation of the FAP for this area.
   * + 1. Holding Company and operating company arrangements
6. During the current development phase of the project there are two investors who have funded the project during this phase; these are:
   * EDF Energy Holdings limited (companies house - ref 06930266)
   * General Nuclear International limited (companies house - ref 09719821)
7. [REDACTED] In establishing the SZC project the investors formed two other companies registered in the United Kingdom (UK), firstly the investment company known as the ‘Holding Company’, this provides the enduring vehicle for investors to join the project and maintain assurances in their investments, without being directly involved with the delivery of the project or being held to account for the associated legal obligations of a nuclear site licence company. The second company, NNB GenCo (SZC), is the company that has applied for the nuclear site licence and their application is the subject of this assessment. NNB GenCo (SZC) is the company that would deliver the project and be held to account by the regulatory bodies.

Figure 2 - NNB GenCo (SZC) Investment Model[[4]](#footnote-5)

[REDACTED]

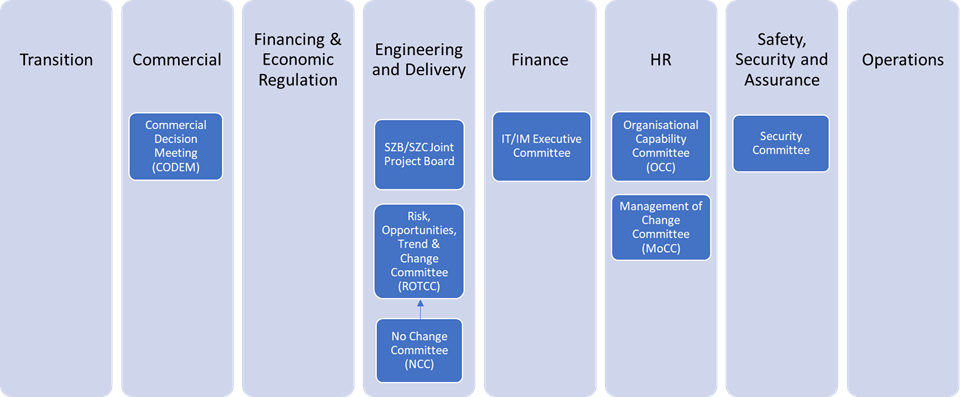
1. ONR conducted a desktop review of the shareholder agreement on 15 December 2021 (Ref. 16), where it was noted that the current governance arrangements described within the shareholder agreement are inconsistent with our expectations for a licensee organisation, particularly around the level of control residing in the Holding Company. The current shareholder agreement for the development phase of the NNB GenCo (SZC) project places control of key policies relating to safety and security with Holding Company, rather than the licence applicant - NNB Generation Company (SZC) limited, which is inconsistent with the expectations of ONR.
2. Section 4(10) of the Nuclear Installations Act 1965 places an absolute responsibility on the holder of the nuclear site licence regarding compliance with the conditions attached to that licence. The licensee should be able to exercise effective day-to-day control over all activities on the site. It is therefore essential that there is clarity on which body has legal responsibility for the safe operation of a licensed site. In addition, our guidance, Licensing Nuclear Installations, states an expectation that whether a subsidiary of a group parent or as a shareholder in a joint venture company, the parent company can adopt a strategic role. However, the licence applicant will need to demonstrate that this relationship will not be detrimental to safety or affect the licensee's legal responsibilities.
3. Based on these expectations there is concern that the Holding Company may have an undue influence on the GenCo Board’s decision making, which could potentially impact safety in the future. It is therefore unlikely that we would grant a licence to a company with these governance arrangements.
4. Consequently, NNB GenCo (SZC) provided a commitment letter (Ref. 12) that seeks to address the identified shortfalls in expectations. These fall into seven key areas, which are:
   * appoint Safety, Licensing & Assurance Director to the NNB GenCo (SZC) Board
   * NNB GenCo – SZC Chair
   * GenCo board composition
   * controlling mind - key policies
   * people transfer
   * demonstrating competency
   * single point of accountability for competency & training
5. ONR reviewed each commitment of the NNB GenCo (SZC) letter, and we are content that the shortfalls are recognised and understood by the Chief Executive. While the identified shortfalls mean that we would not grant a licence at this time, ONR is content that NNB GenCo (SZC) has in place a plan to address them.
6. We also reviewed the terms of reference (ToR) for the Holding Company (Ref. 17) and for NNB GenCo (SZC) (Ref. 18) and noted these would need to be revised once the shareholder agreement has been amended.
7. As part of this assessment, we also interviewed a selection of the NNB GenCo (SZC) Board members to gain an understanding of their role and the interactions between the Holding Company and the NNB GenCo (SZC) Board.
8. We noted that the GenCo Board is operating within the constraints of the current shareholder agreement, and this was considered adequate for the current phase. The GenCo board members interviewed recognised that the GenCo Board needs to evolve as the project progresses to the next stage and this will result in notable changes to the GenCo Board membership. This review of the GenCo Board composition has been captured in the commitment letter to ONR.
9. The future GenCo Board composition is an area where ONR will seek further confidence, as the project carries out a systematic review of the composition of the GenCo Board with reference to relevant good practice in corporate governance.
10. The current governance arrangements described within the shareholder agreement are inconsistent with our expectations for a licensee organisation, particularly around the level of control residing in the Holding Company. However, we take assurance from the written commitments in the letter to ONR that a plan is in place to address this in due course.
    * + 1. Governance model through the organisation
11. The SZC governance framework paper (Ref. 20) was endorsed by the project performance committee (PPC) on 16 March 2022 and was then approved by the NNB GenCo (SZC) Board on 30 March 2022, without amendment.
12. The paper provides a good overview of the SZC governance framework, while noting the potential changes associated with the government investment and future investor discussions.
13. The project is currently in a development phase and as noted earlier in this assessment, has a shareholder agreement which represents the current phase.
14. The current hierarchy of control and decision making is as per Figure 3 below, with the NNB Holding Company (SZC) Limited Board maintaining an overview on their investment and controlling reserved matters, with the NNB GenCo (SZC) Board having the authority to make decisions for the project, some of which have the potential to impact quality and/or safety. The executive leadership team has the delegated responsibility to run the project on a day-to-day basis. ONR note that NNB GenCo (SZC) will review the provision of reserved matters as part of the ‘controlling mind’ commitment.

Figure 3 - NNB GenCo (SZC) Governance Model



1. SZC stated the following principles as core to their governance framework and decision-making culture are that:
   * Authority is delegated to individuals, not committees – for accountability in decision-making; and
   * Decisions are taken following adequate consultation in line with SZC’s procedures – for well-rounded and informed decision-making.
2. The governance arrangements are documented across the following key documentation:
   * Shareholder agreement
   * company manual
   * project execution plan
   * • Terms of Reference for the Holding Company Board, the GenCo Board, the GenCo Board Committees and Executive Management Committees
   * organisational notes - an updated template to be rolled out to all functions, as part of implementation plan for ‘three lines of defence’ assurance model
   * delegations of authority manual and financial authority limits
   * conflicts of interest charter – not published at the time of writing
   * supporting company procedures/management arrangements – forms part of the ‘Phase 2b’ procedure adoption plan, required to be completed by June 2022
   * corporate governance policy – currently operating under EDF’s policy. SZC version to be adopted as part of the integrated management system (IMS) team’s policy adoption plan by June 2022
3. SZC has recently established its shadow NSC, which has been considered under a separate LC13 intervention. There is also an intention to establish a safety, health, and environment committee at GID. These committees will feed directly into the GenCo Board through the committee chairs presenting at the GenCo Board and where appropriate providing committee reports.
4. SZC also provided a short presentation regarding its of their boards and committees, as of February 2022, which provided assurance on how the committees interact (Ref. 21). We suggested that it may be useful to include this type of information on the company intranet to enable new starters to understand, at a high level, the governance arrangements of the project.
   * + 1. Governance model through the organisation
5. A number of management committees have been established to discharge the director’s roles and responsibilities. These committees enable members of the executive leadership team to come together as two or more and coordinate with other relevant functions in the project, report on the strategic definition and implementation of activities within their scope of responsibility and secure cross-functional endorsement of key decisions and activities, see Figure 4 below.

Figure 4 - NNB GenCo (SZC) Management Committees



1. The management committees do not have authority to take decisions but provide a forum for consultation prior to the exercise of authority by their Chair.
2. In the current development phase of the project, delegations of authority are limited to a tightly controlled set of financial authority limits (Ref. 22.). As a result, the Chairs of the management committees are only able to endorse decisions and determine when to escalate to the PPC and/or the NNB GenCo (SZC) Board. It is expected that from GID, a change to the scheme of financial and non-financial delegations of authority will take place to facilitate greater decision-making below PPC and/or board level. The scheme of delegations of authority will evolve again from FID as the project moves into a delivery phase. Work is ongoing through the Chief Financial Officer to develop the future delegations of authority.
3. ONR sampled the activities of several committees through discussion with key staff and were broadly content with the rigour and governance currently in-place for the project. The governance arrangements samples are set out below.

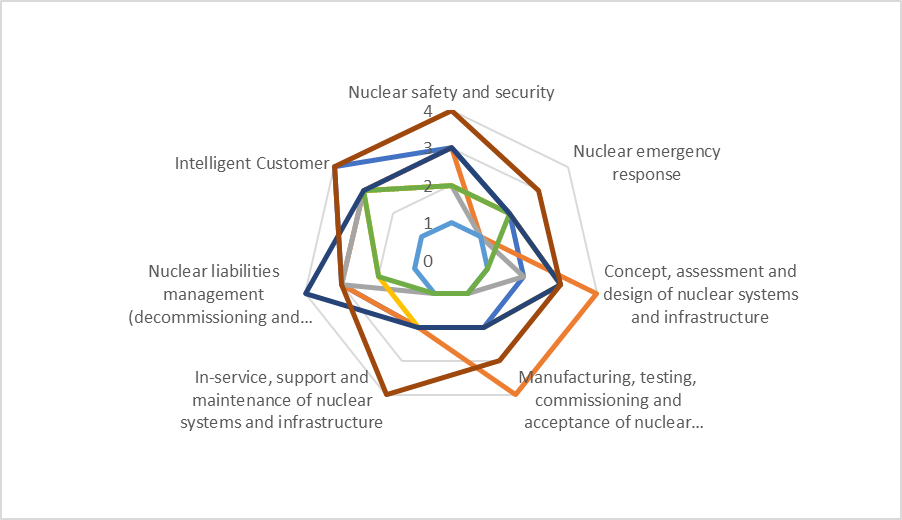
##### Project performance committee

1. This is a monthly meeting (formerly known as the project board and which is now combined with the former independent advisory committee) to review the monthly performance report and papers that would previously have gone to the project board, including those that will go before the GenCo Board.
2. At the time of writing the meeting has only run once in this new format, in February 2022. The meeting is chaired by the Managing Director with over 20 attendees, including the executive, programme and functional directors, and observers from the UK Government.
3. An example of the PPC report pack was reviewed by ONR at NNB GenCo (SZC)’s premises. ONR was content that the pack included relevant safety related information for this phase of the project.
4. NNB GenCo (SZC) also explained that learning was expected to be included at the start of all relevant board papers. ONR was provided an example – Equipment Storage & Preservation Strategy – 6 December 2021, where learning was captured in section 3 of the document.
5. It was also noted that the hold point panel (LC19), chaired by the Safety and Assurance Director has been established and enacted. This panel reports, as required, into the executive leadership team via the PPC or the NNB GenCo Board as part of the underpinning governance arrangements.

##### Risk, opportunities, trend and change committee (ROTCC)

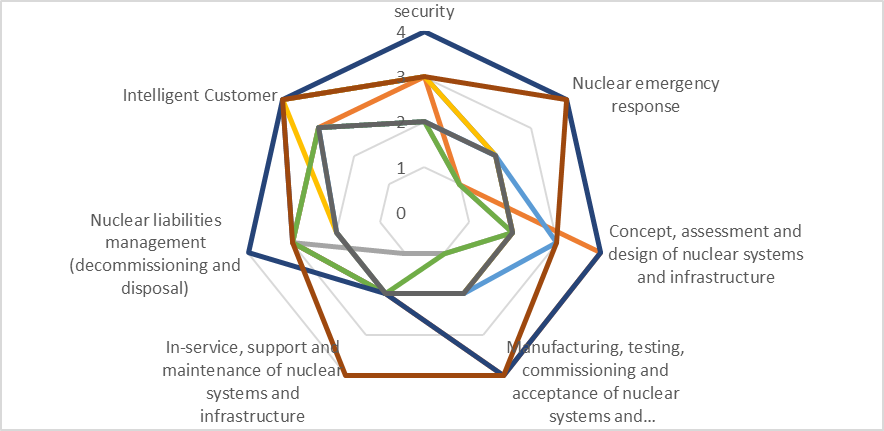
1. The ROTCC is chaired by the engineering and delivery director.
2. As defined in the ToR (Ref. 22), the purpose of the ROTCC process is to provide an outline of the core activities, which contribute to the management of risk, opportunity, trend and change within the SZC project, and to explain the interfaces between these and other SZC activities.
3. The committee has four primary objectives:
   * Ensure that management at the appropriate level of delegation are provided with visibility of changes in a timely fashion to allow intervention, challenge, and approval as part of the decision-making process, rather than after the event;
   * Provide a consistent format which provides all the information to support the decision-making process and meets the requirements of systems and processes;
   * Provide an efficient workflow to obtain the relevant approvals for changes, which forms the basis of the record of changes and approvals throughout the project lifecycle; and
   * Provide evidence that each of the programme/alliance ROTCC meetings has ensured that risks and opportunities are being effectively managed within the project, including that sufficient support is provided and that items are escalated as required.
4. Through discussion, ONR was content the ROTCC is providing the appropriate level of control over safety / quality related risks at this stage of the project. This may be an area where ONR seeks further confidence going forward.
   * + 1. Overview of risk management
5. The Chief Finance Officer (CFO) provided an overview of the risk management process in-place across the project. The risks are structured in a hierarchical format and reviewed on a quarterly or monthly basis based on the level of risk.
6. As an example, it was explained that there are approximately 80 risks at the portfolio level, with over 800 project level risks currently. The supply chain risks have yet to be defined.
7. Going forward the Audit and Risk Committee will oversee the programme level risks. This will be in-place by Q2 2022 with a non-executive as the independent chair.
8. Scenario based modelling and analysis of risks is periodically conducted based on 10 different scenarios. The project uses the 14 key enablers to categorise the risks. Every six months the portfolio risks are shared with key stakeholders e.g. regulators, government.
9. ONR sampled the risk register while it was being presented on screen to explore safety or quality related risks. It was noted that more of these risks would be included as the project progresses.
   * + 1. Delegation of authorities
10. The CFO provided an overview of the delegation of authorities for the project, explaining that the delegations are limited, noting the project is constrained in the development phase.
11. There is a delegation of authorities’ manual currently in-place. The key principles are as follows:
    * delegation is to individuals now and in the future, rather than committees
    * the authorities may be changed at GID, subject to investment decision
    * there will be a step change at FID, with limits significantly increased to enable delivery
    * The CFO is producing a board paper in May 2022, setting out the proposed future on delegation of authority
12. ONR expect the financial delegations to be in-place and aligned to the activities being undertaken at the time, which are consistent with the nuclear safety, security, and safeguards responsibilities of the GenCo board.
    * + 1. Alliance governance / delegated authorities
13. The Civils Engineering & Delivery Programme Director provided an overview of a paper in production on the governance arrangements for the alliance and how the delegated authorities will be implemented. ONR requested that this should be included in the forward action plan for governance. ONR will seek to understand the controls related to quality and safety, and how NNB GenCo (SZC) retain their intelligent customer capability for the work carried out on their behalf that has the potential to impact safety.
14. Overall, based on ONR’s sample, we are content that the approved governance framework is satisfactory, and where appropriate there is a clear focus on safety. We note the majority of these governance panels have been in place through 2021, and the governance framework paper is the catalyst that brings the various committees together into a co-ordinated set of arrangements. We recognise this framework needs time to embed and evolve in the organisation, hence this will be an area of our continued focus going forward.
    * + 1. Leadership development & direction
15. The Executive team’s accountabilities are captured in the NNB GenCo (SZC) Company Manual, version 4, although it was explained by SZC that there are some minor changes anticipated in these accountabilities, which have emerged through internal and external challenge. NNB GenCo (SZC) assured us that the changes are being captured and will be subject to management of change, as required, leading to an updated version of the manual (version 5) that will be published around GID.
16. As part of the intervention, we sampled the HR Director accountabilities:
    * As the HR Director, the director currently has accountability for LC36, and will also pick up accountability for LC10 and LC12 through change control over the coming months, as defined within the commitment letter to ONR;
    * Through discussions we ascertained that the HR Director understood their accountabilities in respect of the nuclear site licence conditions and the importance of maintaining the appropriate rigour and standards, while being an active voice at a senior level;
    * Recognising the HR function has a key role in maintaining licence compliance, the director has development plans in-place for members of the HR team who are not experienced in nuclear context. These plans will form part of the organisational development FAP;
    * ONR noted that the latest version of accountabilities places a duty on each of the directors to be the ‘controlling mind’ for the project. The HR Director explained this was associated with ‘ownership and setting the strategic direction at a senior level; and.
    * ONR enquired where their definition of ‘controlling mind’ was derived from. SZC explained it referred to a board paper in April 2021, which referenced out to a paper by the Organisation for Economic Co-operation and Development (Ref. 23).
17. NNB GenCo (SZC) explained that in March 2021 a process of reviewing job descriptions and accountabilities for the executive team commenced. The central EDF corporate (centre of excellence) supported this exercise, with the aim of utilising their existing knowledge and where appropriate ensuring consistency across EDF.
18. As part of this process a skills mapping exercise was conducted of the NNB GenCo (SZC) Board, which was led by an occupational psychologist. The skills mapping commenced in December 2021 and focused on determining the collective skill set of the Executive and the GenCo Board, which consisted of three steps:
    * A self-assessment – the scope included nuclear industry experience and knowledge, sector knowledge, technical experience, and governance;
    * Completing an occupational personal questionnaire, with 32 attributes, which produced a psychometric personal profile; and
    * A moderation process across the Executive team, led by HR and Safety Director to ensure consistency.
19. The non-attributed output for ‘nuclear experience and knowledge’ for the GenCo board and the Executive team is captured in Figures 5 and 6 below.

Figure 5 - GenCo Board - Nuclear Experience and Knowledge



1. The remaining areas of the skill mapping exercise of the GenCo board are recorded in the GenCo Board - Skill Mapping Overview (Ref. 24).

Figure 6 - NNB GenCo (SZC) Executive Team - Nuclear Experience and Knowledge



1. The remaining areas of the skill mapping exercise of the Executive Team are recorded in the NNB GenCo (SZC) Executive - Skill Mapping Overview (Ref. 25).
2. ONR noted the skills mapping exercise confirmed that the Executive have a broad balance of individuals with relevant nuclear experience and knowledge, without an over-reliance on any single individuals. Going forward these maps will be used to inform the development plan for the senior leadership. We are content with this approach.
3. It is worth noting the current GenCo board composition, in relation to the level of non-executive and independent representation, is constrained by the current shareholder agreement, and has been recognised as an area that will need to be reviewed by NNB GenCo (SZC). This review is part of the commitment letter to ONR.
   * + 1. Employment model for seconded / key staff
4. Although NNB GenCo (SZC) is a legal entity, registered in the UK, it is currently not an employing entity, which is similar to HPC. However, the key difference is NNB GenCo (SZC) is likely to be owned through a range of shareholders, with EDF (the current majority shareholder in both organisations), becoming a minority shareholder in NNB GenCo (SZC) going forward beyond FID.
5. As part of the ONR assessment we are seeking confidence in the current and proposed employment model. NNB GenCo (SZC) took a workforce strategy update paper to their board in April 2021 (Ref. 26). This paper set out the route map for a phased transition of staff into the direct employment of NNB GenCo (SZC).
6. The HR Director shared that although this approach was endorsed by the NNB GenCo (SZC) Board in April 2021, the approach failed to gain the support of the NNB Holding Company Board at the end of 2021, resulting in a shareholder objection. An alternative approach has been discussed separately with ONR and HMG and this forms the basis for the commitment to progressively transfer staff into direct employment as part of the letter to ONR.
7. NNB GenCo (SZC) acknowledge the need to have the appropriate skilled resources for the different phases of the project. To achieve this NNB GenCo (SZC) will utilise embedded contractors to complement their staff. The HR Director confirmed their strategy is to have a balance between the workforce and embedded contractors at any one time. The HR Director has introduced a number of mechanisms to oversee and where necessary control the organisational capability, these include bi-monthly organisational capability committees (OCC) and a quarterly strategic meeting at HR Directors’ level, across SZC, HPC and ENGL to identify and oversee strategic moves, mainly at the senior level.
8. Mechanisms for employment - as discussed earlier, NNB GenCo (SZC) will become an independent company from the EDF group at the point of FID. Until this point, the core safety capability will continue to be secured through the existing secondment arrangements, the same as HPC. ONR has previously reviewed these arrangements and are content that they are adequate for this phase of the project. However, as the SZC project deconsolidates from the EDF group, NNB GenCo (SZC) will progressively become the direct employing entity of the capability, underpinned by enhanced contractual arrangements.
9. The Legal Counsel then provided a summary of the enhanced employment arrangements between EDF and NNB GenCo (SZC) which are in-place or being developed to ensure the appropriate resources are available and secured at the time they are needed. These are described in the following subsections.

##### Employment model agreement (agreed (unsigned) – final form)

1. Agreement between NNB GenCo (SZC)and EDF Energy Limited. This agreement is used for longer-term permanent transfers, it covers the provisions for:
   * pension
   * employee tax
   * continuity of employment
   * movement of people (engagement principle)

##### Master secondment agreement - enhanced (in draft)

1. This agreement covers movement of people within EDF Energy group (HPC / ENGL). The agreement ensures that the individuals comply with NNB GenCo (SZC)’s arrangements and confirms line management and pay arrangements.
2. This agreement is used from short to medium term secondments, indicatively up to two years.

##### Expat agreement (NNB GenCo (SZC) version draft - unsigned)

1. This agreement is used for EDF SA employees seconded to NNB GenCo (SZC) from the broader EDF group. An individual’s employment is suspended in France, but they retain some rights for pension and social security benefits in France.
2. Agreement for up to [REDACTED] (generally but can be extended with additional arrangements) and is structured to comply with aspects of French employment law.
3. Notice periods:
   * individual request – [REDACTED] notice
   * SZC can request termination – [REDACTED] notice
   * EDF SA cannot terminate the arrangement early

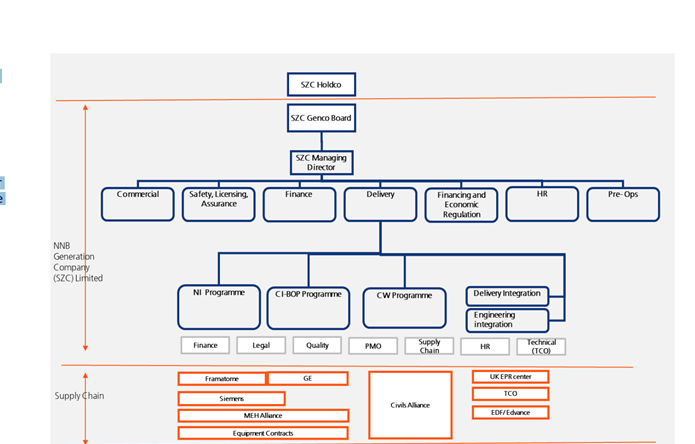
##### Service agreement with contractors (enhanced arrangements to be produced)

1. This agreement will be based on the agreement that is currently being used for embedded contractors. This will be enhanced with a secondment letter between NNB GenCo (SZC) and individuals, clarifying the contractual expectations. This is seen as a positive step forward by ONR to confirm safety expectations.
2. We acknowledge the strengthening of the current arrangements through this approach.

##### New collaboration agreement, which is a replacement for the Inter-Project Service Agreement (IPSA) - (to be developed)

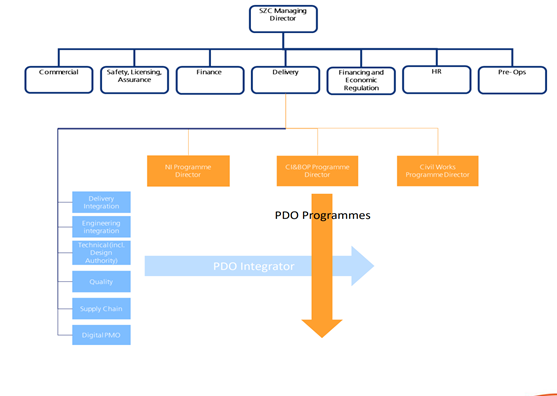
1. This agreement will supersede the current ‘IPSA’ agreement for securing capability from HPC. The new agreement will enable staff to move both ways between SZC and HPC to support personal development.
2. The agreement will strengthen the engagement around the following:
   * access to HPC resource
   * knowledge sharing
   * cross project talent development (SZC to HPC)
3. This agreement also covers the sharing of equipment between HPC and SZC, potentially during operations and outages.
4. In summary, we are content with the current arrangements for employment as part of the EDF group, which have been in-place for a number of years on HPC. We are also reassured by the range of mechanisms available to NNB GenCo (SZC) going forward that will continue to secure the core capability needed at the point of delivery. Most of the enhanced arrangements are agreed in principle and ready for signing once the project moves towards FID.
   * + 1. Holistic assurance
5. NNB GenCo (SZC) is intending to adopt a three -lines of defence assurance model that is based on recognised industry practice. This approach identifies, assesses, and manages risks and opportunities, supporting safe delivery to quality, cost, and time. This approach was approved by the NNB GenCo (SZC) Board in November 2021.
6. The first line of defence is through the delivery arm of NNB GenCo (SZC), the PDO, which will be responsible for designing, implementing, and maintaining effective day-to-day control measures; supervising the execution of work and implementing corrective actions to address any issues it identifies. The subject matter experts within the PDO’s integrator departments and programmes’ delivery, as well as their partners will also provide assurance of timely delivery to technical and quality requirements.
7. The second line of defence delivered through the enabling functions/ directorates of the SZC organisation (i.e., the directorates other than the delivery directorate), sets the policies, standards, procedures, and guidance to assist the PDO in developing effective procedures, controls, and implementing them. It also assures that the PDO is compliant with the organisational standards and the effectiveness of its control measures through a systematic programme of audit, inspection, and surveillance, including conducting such activities within all tiers of the supply chain on a sampling basis. Any findings, including risks are brought to the attention of the Managing Director and the NNB GenCo (SZC) Board.
8. The third line of defence consists of INA, internal audit and other partners as deemed appropriate by a forum such as the audit and risk committee of the GenCo Board. It focuses on strategic organisational risks, including those with wider implications for external shareholders and stakeholders. It will work with the first and second line of defence to assure that the overall programme of audit covers all risks and that mitigating measures to address these or to minimise their impact are effective. It may commission independent reviews relating to specific risks and/or issues to be undertaken through the enabling functions or by external independent bodies (e.g., Infrastructure and Projects Authority (IPA) critical friend reviews or other similar reviews). There is also a direct line into the GenCo Board for assurance matters relating to nuclear safety or security through the Safety and Assurance Director, which includes issues raised by the INA function or nuclear safety committee.
9. NNB GenCo (SZC) proposes to adopt a proportionate approach to the assurance of the supply chain based on level of risk and other key factors, which includes compliance and performance history. NNB GenCo (SZC) believes this approach will enable it to develop an effective and efficient assurance framework tailored to meet its demands at various stages of the project.
10. In summary, we are content with the three-lines of defence being used by NNB GenCo (SZC) for holistic assurance. This approach is used elsewhere in the nuclear sector, but ONR will seek confidence in the way that the arrangements continue to be implemented and embedded on a project with the scale and complexity of SZC, ahead of the step change in risk at FID.
    * 1. Comparison with Standards, Guidance and Relevant Good Practice
11. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities, as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, ONR safety assessment principles and ONR technical assessment and inspection guides.
    * 1. Status of Regulatory Issues
12. There are no outstanding regulatory issues in the assessed areas for governance and assurance. However, the commitments made by NNB GenCo (SZC) to ONR will be actively monitored through their formal commitments process.
    * 1. Summary
13. ONR is content that the business model for the SZC project has matured significantly over the last 18 months. There is clear alignment across the organisation, with a good understanding of the operating model that provides the underpinning. Although there is still a significant amount of work on implementation, the regulatory focus going forward will be on embedding the operating model. We will seek confidence, and engage where necessary, in addressing the elements within the commitment letter, and the implementation of the relevant aspects of the FAP.
14. We noted that the GenCo Board is operating within the constraints of the current shareholder agreement, and this was considered adequate for the current phase. The GenCo board members interviewed recognised that the GenCo Board needs to evolve as the project progresses to the next stage and this will result in notable changes to the GenCo Board membership; this review of GenCo Board composition has been captured in the commitment letter to ONR.
15. The current governance arrangements described within the shareholder agreement are incompatible with our expectations for a licensee organisation, particularly around the level of control residing in the Holding Company. However, we are content with the written commitment in the letter to ONR that a plan is in place to address this matter in due course.
16. Based on ONR’s sample, we are content that the governance framework is satisfactory, and where appropriate there is a clear focus on safety. We noted that these arrangements need time to evolve and embed in the organisation, hence this will be an area of our focus going forward. We sampled several committees through discussion with key staff and were broadly content with the rigour and governance currently in-place for the project.
17. ONR noted the skills mapping exercise confirmed that the Executive team have a broad balance of individuals with relevant nuclear experience and knowledge, without an over-reliance on any single individuals. Going forward these maps will be used to inform the development plan for the senior leadership team. We were content with this approach.
18. We are reassured by the existing arrangements in-place currently for securing core safety capability, which replicate the enduring arrangements at HPC. We have also gained confidence in the range of mechanisms available to NNB GenCo (SZC) to secure the resources needed at the point of delivery, post FID. Most of these arrangements are agreed in principle and ready for signing once the project moves towards FID.
19. We are also content with the three-lines of defence approach being proposed by NNB GenCo (SZC) for holistic assurance. This approach is used elsewhere in the nuclear sector, but ONR will seek confidence in the way the arrangements are implemented on a project with the scale and complexity of SZC, ahead of the step change in risk at FID.
20. We have reviewed each commitment of the NNB GenCo (SZC) letter and are content that if the shortfalls are addressed within the declared timetable, we cannot see a barrier to granting a NSL from a governance and assurance perspective.
    * 1. Conclusion
21. I consider NNB GenCo (SZC)’s governance arrangements to be proportionate for the current stage of the SZC project, noting the level of activity planned before FID.
22. Based upon the assessment of the governance and assurance aspects of NNB GenCo (SZC), in my opinion NNB GenCo (SZC) has not developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder, due to the constraints of the current shareholder agreement relating to safety and security. ONR note the commitments made in the letter and will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations
23. There are several future challenges, where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAP and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
24. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Organisational Development
       1. Scope of Assessment Undertaken
25. The ONR expectations for this aspect of the assessment are defined in the Task Sheet (Ref. 28). The scope of the assessment covers the following areas:
    * future operating model - post FID
    * management arrangements
    * nuclear baseline
    * resourcing
    * roles, responsibilities & authorities, and accountabilities
    * project enablers
    * organisational resilience
    * management of change
    * knowledge management
    * technical client organisation (TCO)/technical service organisation (TSO)
      1. Applicable Relevant Good Practice
26. The key RGP in support of the assessment includes but is not limited to the following:
    * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020 (Leadership and Management for Safety MS.1 & MS.2)
    * Licensing Nuclear Installations November 2021
    * Nuclear Safety TAG, NS-TAST-GD-048 Revision 6 Organisational Change
    * Nuclear Safety TAG, Function and Content of a Safety Management Prospectus (SMP) - NS-TAST-GD-072 Revision 4
    * Nuclear Baseline and the Management of Organisational Change – A Good Practice Guide – March 2017 Issue 3 published on behalf of the Nuclear Industry Safety Directors Forum (Ref. 159)
    * High reliability organisations, A review of the literature HSL 2011 for HSE RR899 (Ref. 160)
      1. Assessment Process and Outcomes
         1. Regulatory interactions
27. This topic stream Organisational Development (OC3) developed a regular drumbeat of Level 4 engagements since the start of the licensing process. Overall, ten level 4 meetings were held following the NSL application in June 2020, the associated contact records are listed below and can be found in the trackers (Refs. 8 and 9):
    * 7 September 2020 ONR-NR-CR-20-453
    * 1 October 2020 ONR-NR-CR-20-535
    * 5 November 2020 ONR-NR-CR-20-672
    * 25 January 2021 ONR-NR-CR-20-888
    * 11 March 2021 ONR-NR-CR-20-1033
    * 6 May 2021 ONR-NR-CR-21-076
    * 15 July 2021 ONR-NR-CR-21-215
    * 30 September ONR-NR-CR-21-330
    * 4 November ONR-NR-CR-21-387
    * 2 December 2021 ONR-NR-CR-21-448
28. The Task Sheet was used to draft the intervention scope document, I-OC3 for Organisational Development (Ref. 29). This enabled a review of the focus areas. We carried out the intervention I-OC3 Organisational Development in February 2022.
    * + 1. Evidence provided
29. The documents relevant to the assessment and intervention are detailed in the Contact Record for the intervention I-OC3 (Ref. 30).
    * + 1. Future operating model – post-FID
30. This area focussed on the business model, seeking confidence that it is clearly defined and ensures NNB GenCo (SZC) will have overall control of activities at the site throughout the lifecycle of the project. This is covered in the Governance section of this Report (Section 4.1).
31. We were looking for NNB GenCo (SZC) to set out the future operating model (a PDO) post FID, including the governance and oversight arrangements. The project execution plan (Ref. 31) should set out the transfer from pre to post FID and the transition phases for the project.
32. The need for the future operating model to be defined meant a Level 4 Regulatory Issue (RI) 8552 was raised in February 2021 with a due date for closure of June 2021. NNB GenCo (SZC)’s response was to set up an executive steering group, which ran until the end of 2021, comprising a number of workstreams to develop and describe the organisational model. This resulted in a paper the ‘SZC Organisational Model’ (Ref. 15) being presented to the project board on 15 November 2021 and the NNB GenCo (SZC) Board on 23 November 2021, setting out the organisational model and timeline for its implementation.
33. A presentation of the PDO was provided on 21 January 2022 (Ref. 32).

Figure 7 - NNB GenCo (SZC) Project Delivery Organisation



1. NNB GenCo (SZC) will be responsible for specifying requirements, governing, enabling, assuring, and managing the integration of its suppliers and alliances. The assurance of delivery will be performed by commercial, finance, financing and economic regulation, safety, security and assurance and HR functions within the organisation.
2. Within the project organisation, the delivery team (known as the PDO) will be responsible for the delivery of the project works against defined requirements from design to hand over to the operations team as well as managing the integration with the supply chain. The PDO itself is a matrix organisation split between the following two elements;
   * PDO integrator: which will have the role of control and coordination of the delivery scope through the integration of the individual programmes with all activities outside these programmes needed to deliver the project scope into operation. This includes design authority, which will own and control the safety case for construction including any changes deemed necessary throughout the life cycle of the plant; and
   * PDO programmes: The integrated EPCC delivery is organised through three main programmes: civil works, nuclear island, and conventional island-balance of plant teams.

Figure 8 - NNB GenCo (SZC) Project Delivery Organisation Programmes



1. We noted that the PDO model is evolving and will therefore be part of future ongoing regulatory engagement and assessment.
   * + 1. Management arrangements
2. ONR expects that the SMP provides a clear description of the company, its structure and how it intends to operate. It should include a description of the governance of the organisation, and its management system and staffing arrangements.
3. NNB GenCo (SZC) has adopted the approach of using a company manual to cover the relevant governance and organisational elements usually contained within a SMP. The company manual v4.0 (Ref. 33) has been reviewed against ONR TAG: Function and Content of a SMP - NS-TAST-GD-072 Revision 4 and an inspector note produced (Ref. 34).
4. Although shortfalls were identified within this version of the company manual, we are content that NNB GenCo (SZC) understands and acknowledges the gaps and has agreed they will be addressed in version 5.0 of the manual to be produced at GID. Noting the manual will need to also incorporate additional changes driven by GID, we are content to accept the company manual as adequate for this stage, with the clear understanding that a plan is in place to address the gaps in due course.
5. We also looked for clear management arrangements for people processes. The arrangements for people processes have been adopted from NNB GenCo (HPC) and as part of this process have undergone a review to check their suitability for NNB GenCo (SZC).
6. A demonstration of the live intranet showed a specific ‘organisation capability’ area, which allows staff to access people procedures and the required forms, although it was noted that the latter needs to be separately accessed via Teamcenter. The area also has the current versions of the nuclear baseline database and organisation charts.
7. We were satisfied that these arrangements have been intelligently adopted from NNB GenCo (HPC) and have been in place for some time on the project. We noted the work instruction for ‘Maintain the Nuclear and Environmental Baseline’ was undergoing a minor update to include environment at the time of the intervention.
8. We focussed on whether there is suitable governance and oversight for this topic stream. NNB GenCo (SZC) has set up its own Organisation Capability Committee (OCC), which previously had been operating jointly with NNB GenCo (HPC). The inaugural meeting was observed on the 2 February 2022 and an inspector note produced (Ref. 35). The same independent non-executive is on both OCCs to enable shared learning. We noted that the OCC ToR need to be revised to be clearer on the purpose, and this was resolved as part of RI 10621. The setting up of the OCC is seen as an important step in NNB GenCo (SZC) becoming a licensable organisation and ONR will review its maturity as part of ongoing regulatory engagement.
9. NNB GenCo (SZC) carried out a self-assessment against LC36 arrangements with the support of an external consultant. A structured framework for the assessment was set against four themes:
   * nuclear/environmental baseline methodology & scope
   * capable operator – capability, competence & control
   * resourcing and use of contractors
   * NB management & justification
10. Question sets for each theme were developed and utilised during the assessment process to provide a repeatable assessment process (Ref. 6). A number of interviews were held as well as a desktop review of documents. The final report (Ref. 36) had 5 ‘areas for improvement’ (AFIs). These findings were considered as continuous improvement and not shortfalls that need to be resolved prior to NSL grant.
11. We concluded that it was positive that the self-assessment had been completed ahead of the intervention, the approved report shared, and the findings (5 AFIs) incorporated into the FAP (Ref. 37).
    * + 1. Nuclear baseline
12. There should be an adequate and up to date nuclear baseline which develops and defines nuclear safety related roles and posts. Our expectation is that the nuclear baseline can demonstrate that the prospective licensee has suitable and sufficient organisation structures, staffing and competences in place to effectively and reliably carry out those activities which could impact on nuclear safety.
13. NNB GenCo (SZC) has been trialling its LC36 arrangements throughout 2021 to introduce the controls required for a nuclear baseline for a major infrastructure project of this nature working in a dynamic environment. This period has enabled NNB GenCo (SZC) to learn and enhance its arrangements.
14. The enhanced controls, which are fundamentally continuous improvement, will be communicated and implemented as part of the FAP.
15. In November 2021 NNB GenCo (SZC) submitted its updated nuclear baseline which included:
    * Nuclear Baseline v2.0: Part A the nuclear baseline Statement November 2021 (Ref. 38)
    * Nuclear Baseline v2.0: Part B the organisation charts November 21 (Ref. 39)
    * Nuclear Baseline v2.0: Part C the nuclear baseline database November 21 (Ref. 40)
    * Nuclear Baseline v2.0 Vulnerability Assessment November 21 (Ref. 41)
    * INA assessment of the nuclear baseline v 2.0 (Ref. 42)
16. We assessed NNB GenCo (SZC)’s nuclear baseline submission against the expectations of TAG NS-TAST-GD-065 Revision 4. This is captured in an assessment note (Ref. 43). The key findings are summarised in Appendix B which has been shared with NNB GenCo (SZC)’s INA for incorporation into the FAP.
17. One of the findings from the I-OC1 intervention which needed to be managed and closed for NSL grant was the need to allocate TSO staff to the nuclear baseline, who are carrying out technical roles on behalf of NNB GenCo (SZC) without suitable Intelligent Customer oversight. This was managed through the Level 3 RI 10607, which has now been closed.
18. We concluded that the nuclear baseline submission was suitable and sufficient; the findings have been incorporated into the FAP for tracking and closure by the NNB GenCo (SZC) OCC as part of its ongoing improvements to its nuclear baseline arrangements.
    * + 1. Resourcing
19. ONR expects a justification of the level of resources required at different stages of the project, and that these resources are commensurate with the risk posed. The organisation also needs to be able to demonstrate how it will maintain the necessary organisational capability. The resource strategy should indicate the quantity of resources and the mix of disciplines/skills required as the project progresses through its various phases.
20. The Resource Strategy v1.0 was shared with ONR (Ref. 44); this incorporates earlier resource development documents into a single strategy that covers both the short-term resource needs up to December 2022 and the full lifecycle requirement based on the EDF new build job families. This is summarised in Figure 9 below.

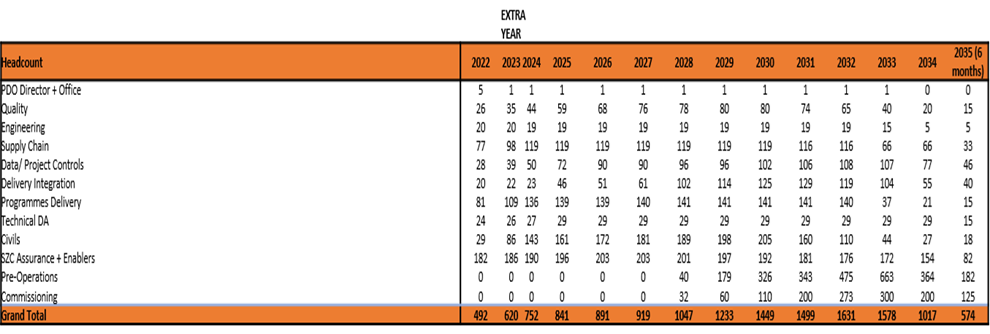
Figure 9 - NNB GenCo (SZC) Full Lifecycle Summary profile

Chart

Description automatically generated

1. Currently NNB GenCo (SZC)’s resource needs are delivered through EDF’s nuclear resource hub; this is an in-house service started in April 2021 handling staff recruitment and onboarding using a dedicated team of three for NNB GenCo (SZC). Recognising the significant ramp-up for the SZC project, the intention is the staff will move to NNB GenCo (SZC) and will manage contractor hiring on an ongoing basis in addition to their current activities. Regular progress updates are being provided for the 200 posts currently being recruited.
2. NNB GenCo (SZC) maintains control of its requirements through the resource strategy and underpinning plans, which are governed by the OCC. These plans are periodically validated against the actual performance and learning gained from NNB GenCo (HPC), while taking into account the assumptions of the SZC project.
3. We noted the detailed resourcing plan, known as the Medium-Term Plan (MTP), is currently a year look ahead. However, we are reassured that NNB GenCo (SZC) is planning a review in June 2022 to look at the next three years, which will result in a MTP that will detail the next four-year planning period.
4. At the end of December 2021, the headcount profile was: 261 full-time equivalents (FTEs) against the Medium-Term Plan of 290 FTEs (the variance reflects a number of leavers from the project who had not yet been backfilled). In addition to the headcount resource, 158.8 FTE are providing support to the project either via the IPSA arrangement (24.4) or consultants (134.4). Head count profile 3.0 is to understand the numbers, skills, and high-level activities.
5. The updated headcount profile v 3.0 was shared for embedded contractors and staff:

Figure 10 - NNB GenCo (SZC) Headcount profile v3.0



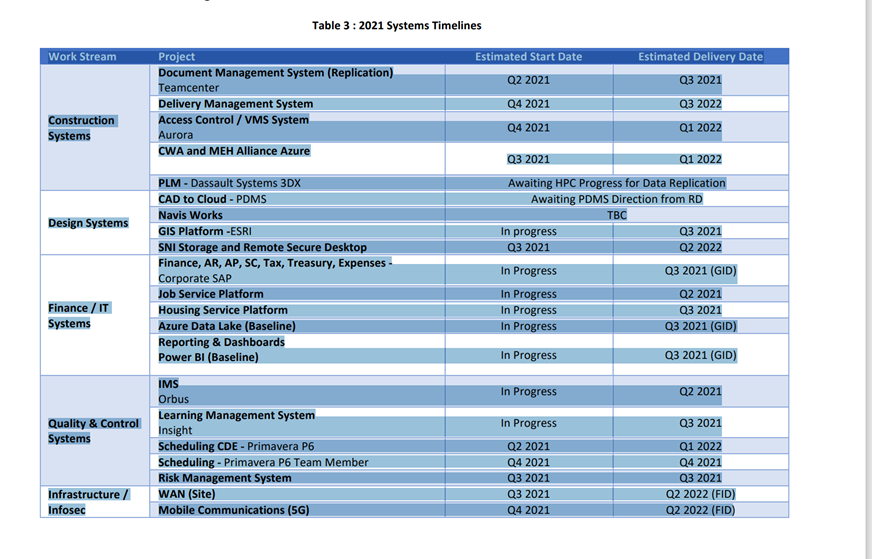
1. An external consultant has carried out research into the available resource pipelines and this will help to inform future versions of the resource strategy.

Succession planning is not yet fully in place but is recognised as an area for further development. It was a finding, AFI04, from the self-assessment. Senior succession planning is being addressed. Wider succession planning needs a period of project stability, but short-term cover is drafted, now requiring verification with stakeholders. Succession planning will be part of ongoing regulatory engagement.

* + - 1. Roles, responsibility, authority, and accountability

1. The company manual should describe the role of directors, managers, and leaders. Employees should understand and accept their roles and know how their performance will be measured and monitored and how they will be held accountable. The company manual should describe how functions, responsibilities and reporting relationships are managed from the GenCo Board down.
2. The company manual v4.0 (Ref. 34) has been reviewed against ONR TAG: Function and Content of a Safety Management Prospectus (SMP) - NS-TAST-GD-072 Revision 4 and an inspector note produced (Ref. 34). The company manual sets out the roles of the Executive Team of eight Directors but not the relationships from the GenCo Board down.
3. A revision v5.0 of the company manual is due at GID. This is to include some of the detail that was removed from the earlier version v3.0 and to strengthen the document so that is fully aligned with the SMP format. It will also include an updated version of directors’ roles and responsibilities and details of the authorities and accountabilities as agreed in the governance framework board paper March 2022 (Ref. 19).
   * + 1. Project enablers
4. We sought confidence that NNB GenCo (SZC) had developed a strategy setting out the required core IT systems and tools with a plan for deployment in line with required activities.
5. A meeting was held on 12 January 2022 to gain an overview of the Chief Information Officer function. A further meeting was held on the 2 February 2022 as part of the planned intervention. An inspector’s note of the meeting was produced (Ref. 45).
6. A digital strategy paper went to the April 2021 SZC Project Board where they were invited to note the updates in the paper and endorse the strategic direction of the Data Strategy and Systems Strategy.
7. NNB GenCo (SZC) is developing a number of key enduring capabilities and accompanying systems. A number of these systems have been installed pre-FID, but further work has been required to stand up new capabilities for these workstreams:
   * construction Systems
   * design systems
   * finance /IT Systems
   * quality & control systems
   * core infrastructure and environments
8. There will be three system types based on how the solutions have been deployed.
   * NNB GenCo (SZC) owned and deployed solutions; these are core systems that are manged and owned by NNB GenCo (SZC).
   * EDF owned and hosted; these are temporary systems to save cost and drive short term benefits, however post FID they will be reviewed and possibly replaced. Examples include SAP, MyHR and IT Helpdesk.
   * NNB GenCo (HPC) owned and hosted; these are systems from NNB GenCo (HPC) where it was agreed that reusing them will be time efficient and cost effective. Examples include Insight and Teamcenter. Teamcenter is the records management system being used under licence from NNB GenCo (HPC), which is an interim position until the outcome of the investment decision is known.
9. [REDACTED]
10. [REDACTED]
11. [REDACTED]
12. These have been developed pre-FID to start the process of data replication as defined by the data strategy. The data strategy will ensure information required for commissioning is available, accessible, consistent & accurate.

Figure 11 - 2021 Systems Timelines



1. We noted the timeline for estimated delivery of systems and will gain further assurance in the delivery of this plan as part of our ongoing regulatory engagement.
   * + 1. Organisational resilience
2. We sought confidence that the organisation has assessed its organisational resilience and has plans in place to develop high risk areas within the five recognised characteristics of high reliability organisations:
   * successful containment of unexpected events
   * effective anticipation of potential failures
   * just culture
   * learning orientation
   * mindful leadership
3. We noted that these themes were included in the self-assessment carried out and section 3.5 of the self-assessment report (Ref. 36) refers, with figure 2 within the report showing an illustration of the organisational capability interpretation of high reliability organisations. This will be an area for future self-assessment and regulatory engagement to seek examples in these areas.
   * 1. Management Of Change
4. We sought confidence that the prospective licensee has arrangements for the management of change (MoC), in accordance with LC36(2), which requires the licensee to make and implement adequate arrangements to control any change to its organisational structure or resources which may affect safety. The whole organisation is covered by the MoC process in a proportionate way using a graded approach, this includes security.
5. As part of this requirement the governance arrangements for the MoC process need to be robust. Therefore, the MoC committee was observed on the 2 March 2022 and an inspector note was produced for the record (Ref. 46). This was the third meeting of the MoC committee. We considered it to be an effective meeting establishing governance of the MoC process. Challenge was provided from the INA and inclusive behaviours were observed. It was positive that the agenda included a look ahead but perhaps more time is needed for discussion giving all attendees the opportunity to contribute. The MoC committee will need to continue to develop, and we intend to revisit it as part of regulatory engagement as the project progresses post GID. It was noted that feedback from the IOC3 intervention had been taken on board, including the need for a revised version of the ToR setting out clearer interfaces and a strategic look ahead, which was an agenda item.
6. NNB GenCo (SZC) adopted NNB GenCo (HPC)’s MoC process before commencing shadow working in January 2022, this involved revising some of the procedures and forms. There is a NNB GenCo (SZC) ‘organisational change form’ (Ref. 47) which is to be completed for all changes on the project, not just those on the nuclear baseline. These are managed with inter-project service agreement support from the HPC organisation capability team. The forms are categorised as to whether they need a MoC assessment form to be completed and provide the organisational capability team with sight of all changes to help provide a more strategic overview. The organisational change form also has an option to select if it relates to SZC or TSO resource. This was only recently shared with the TSO. To date, since shadow working started, five organisation change forms have been received and two of them have been categorised.
7. The organisation change forms are screened at a daily call between NNB GenCo (HPC) and NNB GenCo (SZC), to categorise the forms and record the decision in an organisation change register. ONR viewed the register and observed that it was being updated. Any of the organisation change forms that have an indicative MoC category A-C are then taken every Friday to a second screening meeting, as set out in the MoC procedure (Ref. 48), and the decision is recorded in the MoC register. If a MoC form (Ref. 49) is to be completed it goes to the MoC Committee for review and decision.
8. ONR was shown a completed organisation change form for a HR change that was categorised as a non-nuclear baseline change, therefore no MoC form was required. This was found to be in line with their arrangements.
9. Communications on the project about the purpose and importance of the MoC process has started with a webinar, attended by 80-line managers. Feedback from attendees was positive. The self-assessment highlighted continuous improvement areas including the need to remind the business of the importance of the MoC process and including MoC in the onboarding for new managers. This will also form part of a communications plan, an action in the FAP. However, it should be noted that the LC36 arrangements were being trailed during 2021, with necessary changes made to the process during this period.
10. The nuclear baseline v2.0 did not include some TSO resources e.g. electrical and mechanical, carrying out nuclear safety roles on behalf of NNB GenCo (SZC). We were informed that this is being addressed and an organisational change form is to be completed. A copy of the latter has since been provided as part of Level 3 Regulatory Issue 10607 on intelligent customer, which has now been closed.
11. An interview was carried out with a HR business partner (HRBP) who holds the Role Training Profile 001 MoC Co-ordinator role. There are currently four HRBPs. Although the individual was aware of what was required for the MoC process, there is opportunity to further clarify their role, ensuring the forms and procedure are aligned i.e. the MoC procedure (Ref. 49) says to ‘discuss the organisation change form with the HRBP’ and the organisation change form asks to confirm that you’ve discussed this change with the HRBP but only the HRBP’s signature is needed on the MoC form and suggests only to seek the MoC Co-ordinator’s advice if needed. It would be better to use the same terminology throughout and the MoC form be more explicit in the need to involve the HRBP.
12. [REDACTED]
13. An interview with a line manager demonstrated their understanding of the MoC process and used the example of a Quality MoC they were involved in, which went to the MoC committee (MoCC) in January. They confirmed challenge was provided and that a post implementation review is planned for July 2022. They also recognised that good practice would be for the quality strategy (or a paper of principles) to be taken to the MoCC to show the planned direction of travel for the changes, so that the MoCC has a more strategic view of planned changes.
14. [REDACTED]
15. [REDACTED]
    * + 1. Knowledge management
16. We sought assurance that a strategy has been developed for knowledge management as NNB GenCo (SZC) needs to be able to demonstrate how the organisation will ensure that knowledge of the current processes, plant and equipment etc. is preserved as the organisation transitions.
17. Currently a leavers questionnaire is available as part of an exit interview. However, it was evident that this area has not been fully developed and with the planned changes and transition of the project this will be an area of future regulatory focus.
    * + 1. Technical client organisation/ technical service organisation
18. The Technical Client Organisation (TCO) an arrangement consisting of cooperative and co-located working between the TSO and Design Authority functions of NNB General Company (HPC) Limited and EDF Energy Nuclear Generation Limited.
19. The Technical Service Organisation (TSO) is EDF Energy (TSO) Limited. The TSO is a wholly owned subsidiary of EDF Energy. TSO will provide technical competency for the licensee’s organisational capability requirements in a way that will ensure the licensee retains control and ownership of its design authority and its nuclear baseline:
    * Technical staff reside on the prospective licensee’s nuclear baseline;
    * The prioritisation protocol should be in place and effective;
    * The IC policy should be implemented within the TSO;
    * Clarity is needed on how the governance arrangements within the TSO interface with the prospective licensees own;
    * TSO should have its own agreed management system arrangements with SZC; and
    * The TCO/TSO should provide early access to experienced resources. Any significant changes to the work of SZC staff embedded within the TSO should be controlled through the SZC MoC arrangements.
20. We found that further clarity is needed on NNB GenCo (SZC)’s ability to demonstrate control of the TSO/TCO technical resource, i.e. who is on the SZC nuclear baseline. The TCO/TSO organisational change principles dated July 2021 (Ref 38), are yet to be agreed by all licensees. NNB GenCo (SZC) needs to recognise this and ensure that appropriate TSO arrangements (including commercial) are in place.
21. The service agreement (Ref. 14) between EDF Energy (TSO) Ltd and NNB GenCo (SZC) for phase 1 was signed on 16 February 2022. The parties have agreed that NNB GenCo (SZC) will join the TCO as a new licensee and the TSO will provide technical support for their organisational capability (there will be no ‘TSO’ or ‘TCO’ nuclear baseline structure). This commercial agreement enables NNB GenCo (SZC) to maintain control of its nuclear baseline. The prioritisation protocol for the management of competing demands on the same TSO resources from multiple licensees is contained in schedule 3 of the service agreement and has not yet been stress tested. The agreement is intended to be an interim position pending FID of the SZC project, at which point it is envisaged that the TCO will transition to a new model and a new service agreement between the parties will be put in place.
22. The NNB GenCo (SZC) MoC process now also applies to the TSO, and this was shown in the organisational change form and evidenced by the receipt of the three change forms for the TSO technical staff who needed to be allocated to the NNB GenCo (SZC) nuclear baseline as part of the closed Level 3 RI 10607.
23. The annual task order for the TSO is to be finalised. This will set out the required TSO resources for NNB GenCo (SZC). To date this has not yet been shared with ONR.
24. The TCO/ TSO governance principles are currently set out in Appendix 1 of the service agreement (Ref. 14).
25. The TSO should have its own agreed management arrangements with NNB GenCo (SZC). This was not fully explored during the intervention as it was not required for granting a NSL but will be part of ongoing regulatory engagement.
    * 1. Comparison with Standards, Guidance and Relevant Good Practice
26. In my judgement, at this stage of the project NNB GenCo’s (SZC) activities as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, safety assessment principles and technical assessment and inspection guides.
    * 1. Status of Regulatory Issues
27. There are no outstanding regulatory issues in the assessed areas.
28. We did raise a Level 4 regulatory issue 10621 to address the following shortfalls in organisational development as follows:
    * Revised Forward Action Plan to be shared once approved by the OCC and the NSC: and
    * Revised ToR to be approved for 1. The MoCC - to have clear interfaces with other committees and 2. The OCC - to clearly set out its purpose i.e. making decisions and providing strategic direction.
29. These were provided on the 23 March 2022 and found to be adequate which enabled the closure of the regulatory issue.
    * 1. Summary
30. In terms of compliance with Licence Condition 36, the Licensee:
    * LC 36 (1): shall provide and maintain adequate financial and human resources to ensure the safe operation of the licensed site.
    * LC 36(2): shall make and implement adequate arrangements to control any change to its organisational structure or resources which may affect safety.
31. I consider NNB GenCo’s (SZC) arrangements for compliance with LC36 are sufficiently developed for the activities being undertaken to support issue of a nuclear site licence.
32. In addition, a series of organisational capability topic areas were identified in Appendix 2 of the NNB GenCo (SZC) assessment framework Rev 3 (Ref. 6) under which inspectors would gather relevant information relating to the implementation and verification of NNB GenCo’s arrangements.
33. Any significant organisational capability issues identified during the course of topic leads’ assessments would be fed back directly to the organisational capability topic lead. This information would be used to shape ongoing regulatory work and inform the final assessment reports, both within the technical and organisational capability areas.
34. Appendix 2 of the NNB GenCo (SZC) assessment framework Rev 3 (Ref. 7) asked the following questions regarding organisation development:
    * Are there sufficient resources in-place for the current workload and plans in-place or being developed for future increases, where needed?
    * Has the MoC process been applied in your area and if so, what were your observations?
35. The assessment of the NNB GenCo (SZC) nuclear baseline submission (Ref. 43) included whether sufficient resources were being allocated and that plans were in place for future increase. This is captured in the assessment note and highlighted in Appendix B that some areas were not deemed sufficiently resourced. This has been managed in specific areas e.g. quality, by raising level 4 regulatory issue 10562 to seek clarity on resourcing.
36. The MoC process was trialled during 2021 and has been fully operating since shadow working started in January 2022 with only minor observations on the process noted. During the intervention I-OC3 observations were captured in level 4 regulatory issue 10621 which required a revision of the ToR for the MoC committee to further clarify the purpose and upward reporting arrangements. The revised ToR have now been provided and the RI closed. Overall, we judge that the MoC arrangements are proportionate to the phase of the project and sufficiently flexible to enable rather than constrain organisational development.
37. We are content that NNB GenCo (SZC) has provided sufficient evidence against the expectations for this topic area. In particular, the setting up of its own governance arrangements i.e. the SZC organisational capability committee (OCC), whilst still ensuring learning is gained and shared with NNB GenCo (HPC) OCC. As well as the completion of the self-assessment for the people arrangements and sharing of the comprehensive report, which will allow further improvements to be made.
    * 1. Conclusion
38. I consider NNB GenCo (SZC)’s organisational development function is proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
39. Based upon the overall assessment findings in respect of organisational capability, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
40. There are several future challenges where we will be seeking further confidence in the specific areas set out in the reference document (Ref. 27). We will also be seeking ongoing confidence in the delivery of the forward action plans and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
41. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Competency, Training and Appointments
       1. Scope of Assessment Undertaken
42. ONR’s expectations for the assessment are defined in the task sheet ONR-EPR-TS-20-008 Revision 1 (Ref. 51). The scope of the assessment covers the following areas:
    * competency framework
    * competency arrangements including the nuclear baseline
    * governance and oversight
    * recruitment & appointment processes
    * forward strategy for training and on-boarding post FID
      1. Applicable Relevant Good Practice
43. The key relevant good practice (RGP) in support of the assessment, includes but is not limited to the following:
    * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020 - Leadership and Management for Safety MS.2 - The organisation should have the capability to secure and maintain the safety of its undertakings;
    * Licensing Nuclear Installations November 2021;
    * TAG, NS-TAST-GD-027 Revision 6.1, Training and Assuring Personnel Competence; and
    * IAEA Recruitment, Qualification and Training of Personnel for Nuclear Power Plants, Safety Guide NS-G-2.8, Vienna 2002.
      1. Assessment Process and Outcomes
         1. Regulatory interactions
44. This topic stream, Training, SQEP and Appointments (OC9) developed a regular drumbeat of Level 4 engagements. Overall, nine Level 4 meetings were held following the nuclear site licence application in June 2020, with an initial kick-off meeting held on 24 September 2020 (Refs. 8 and 9). The associated contact records are listed below
    * 5 November 2020 ONR-NR-CR-20-674
    * 29 January 2021 ONR-NR-CR-20-911
    * 28 February 2021 ONR-NR-CR-20-990
    * 7 April 2021 ONR-NR-CR-21-004
    * 5 May 2021 ONR-NR-CR-21-076
    * 29 June 2021 ONR-NR-CR-21-183
    * 9 September 2021 ONR-NR-CR-21-308
    * 29 September 2021 ONR-NR-CR-21-328
    * 29 November 2021 ONR-NR-CR-21-451
45. The task sheet was the basis for drafting the intervention scope document for interventions I-OC5 and I-OC6 training, SQEP and appointments (Ref. 52). I-OC5 was focussed on the central arrangements and I-OC6 on their implementation. The latter was carried out by specialist colleagues and a separate contact record refers (Ref. 53). We carried out an intervention I-OC5 Training, SQEP and appointments on 28 February and 1 March 2022 and produced a contact record (Ref. 54).
    * + 1. Evidence provided
46. The documents provided relevant to this assessment are listed in the intervention contact record (Ref. 54).
    * + 1. Competency framework
47. We sought confidence that there is a competency management framework to control, develop and maintain competence. This includes a training policy, a training strategy, revised training plan, and those requirements have been communicated.
48. A training policy (Ref. 55) is in place which is for both staff and embedded contractors and contains seven standards. TAG 027 sets out the need for the policy to commit to develop and maintain the competence of staff in order to achieve safety and which affirms the licensee’s commitment to resource and implement a training system to support the implementation of this policy. This requirement is addressed in the seven standards in NNB GenCo (SZC)’s training policy. Access to the policy was demonstrated using the live IMS.
49. The executive owner for this topic stream is currently the Safety Director, however the Pre-Operations Director is leading until a decision is made on the ultimate owner. The Pre-Operations Director was the Safety Director before the new incumbent was in post. It was clarified at the end of the intervention that the executive owner will move to the HR Director, and this will be done via the MoC process. The Performance Improvement Manager is within the Safety Directorate and manages the resources and oversees the contract with the nuclear skills alliance (NSA) who provide the training support; this will not change. We noted that the executive accountabilities in the company manual will need to be updated in the planned revision due at GID.
50. The draft training strategy paper (Ref. 56) was shared and requires further consultation. It is expected to go to the June 2022 OCC and then for approval to the July 2022 PPC. The draft strategy is an adequate start, setting out the governance arrangements and compliance targets and how the policy is to be implemented.
51. There is a training plan in place with the NSA, setting out training requirements up to June 2022, but the forward training plan is to be scoped out at a workshop on the 29 March. This is to be part of the FAP (Ref. 56).
52. Communication of the competency requirements for the project has been via emails and monthly team briefing sessions. An example was seen of a team brief from the 26 January 2022. The HRBPs have also been supporting teams directly. However, we considered that a more targeted approach is required especially with the volume of communications across the project. A communication plan is part of the FAP.
53. We concluded that the competency framework has a training policy, a draft strategy, and a training plan in place. NNB GenCo (SZC) has adopted the existing arrangements from NNB GenCo (HPC) for LC10 and LC12. The arrangements have been applied and ONR inspectors have conducted a targeted set of engagements that has confirmed the SZC teams are SQEP and have validated the associated training records. The shortfall (Ref. 12) is focussed on a review of the current arrangements which will feed back into NNB GenCo (HPC) who is using the same arrangements. However, the clarity around the executive ownership for the topic stream is specific to SZC and needs to be addressed first and the required change implemented via their MoC process. This cannot be achieved by the end of March 2022. Therefore, it was agreed that the commitment letter from NNB GenCo (SZC) should also include NNB GenCo (SZC)’s intention to address the executive ownership. The required action has also been captured in the FAP.
    * + 1. Competency arrangements
54. We sought assurance that the nuclear baseline can demonstrate that the licensee understands its competence needs, i.e. that it has enough people with sufficient competence to discharge their roles that impact upon nuclear safety throughout the project lifecycle. Reference should be made to the competence management system to support the nuclear baseline. The nuclear baseline should also be linked to the licensee’s competence assurance records.
55. The nuclear baseline was assessed as part of the organisational development topic stream and is therefore not covered in this section. The competency of those on the nuclear baseline is covered in the following subsections.

##### Self-assessment

1. A contractor has undertaken a self-assessment of the arrangements. It focussed on reviewing the arrangements against RGP using evidence provided by NNB GenCo (SZC). The self-assessment also involved the NSA and section 4 of the report sets out their findings regarding the implementation of the arrangements. Two AFIs were raised, and relevant actions will form part of the FAP. The final approved report was shared after the intervention (Ref. 57).
2. Our view was that this a comprehensive assessment providing details of necessary improvements to the arrangements and allowed us to conclude that there were suitable and sufficient management arrangements for the work currently being undertaken. As stated, NNB GenCo (SZC) is undertaking a review of the procedures with the NSA, which will also feedback into NNB GenCo (HPC).

##### Competency system

1. In April 2021, the joint HPC/SZC OCC approved the eLearning Management System (eLMS) to be deployed across EDF business units to manage training and reduce the use of multiple systems across both organisations. NNB GenCo (SZC) were using SAP role manager for generic worker roles and a spreadsheet for nuclear baseline competency reporting. NNB GenCo (SZC) has now moved to My Learning Hub, which links to SAP, and uploaded all the generic worker profiles. The intention is that nuclear baseline competency compliance data and nuclear baseline roles will also be added to My Learning Hub. The role training profiles (RTPs) are first to be tested in My Learning Hub April 2022.

##### Generic worker profile

1. The My Learning Hub system (part of eLMS) has been implemented on NNB GenCo (SZC) ahead of NNB GenCo (HPC). This has enabled NNB GenCo (SZC) to move the generic worker profiles onto the system for all staff and embedded contractors. The generic worker profile has ten mandatory e-learning training courses that need to be completed. All staff and embedded contractors are auto enrolled on the courses. The generic worker profile is to be completed within one week of joining.
2. We saw evidence that the current compliance is 84% against a target of 85% (Ref. 58). The targets for compliance are now set out in the draft training strategy. There was a demonstration of the live system which reviewed the training record for the Performance Improvement Manager which was all in order showing 100% compliance

##### Competency of contractors - generic site worker

1. The Employees Affairs Unit is to be set up at SZC and it will be managing the competency of construction workers, which will be linked to gaining site access. The generic site worker training requirements are currently being drafted with the support of the NSA.
2. The competency of contractors and how it will be managed going forward is partly set out within Section 3.13 of the CDM client standard document (Ref. 59) which provides an overarching statement regarding competency and states to demonstrate competency, designers and contractors will need to submit a capability statement. The document is still in draft. The procedure ‘Management Industrial Safety Contractor Evaluation’ (Ref. 60) is to enable SZC to assess the health and safety competency of its supply chain and contractors. However, there is no reference to the capability statement requirement and the competence of individuals must be assessed via the tender submissions.
3. We advised that documents should include reference to conventional health and safety and Construction (Design & Management) Regulations. NNB GenCo (SZC) should ensure alignment across standards and cross reference where appropriate.
4. The nuclear baseline and environment role profiles were described. We asked where roles that are not covered in these areas are captured. NNB GenCo (SZC) advised that the same model would be applied to non-nuclear roles, and this would be captured in the forward plan including CDM and COMAH.
5. CDM awareness training is a mandatory course (generic worker profile). All directors have to undertake CDM awareness training, but it was noted that in NNB GenCo (HPC)’s arrangements there appeared to be specific training for programme directors. We recommended that NNB GenCo (SZC) should ascertain if there is specific training available for director level.
6. The construction workforce strategy has been incorporated into the NNB GenCo (SZC) resource strategy which is a short-term strategy setting out the resource pipelines. The development of a medium and longer-term strategy should provide further clarity on the competency arrangements for contractors. Also, the preparation of the post-FID training strategy is to include construction workforce skills and is an action on the FAP. The development of arrangements for contractor competency will be part of ONR’s ongoing regulatory engagement.

##### Role training profiles

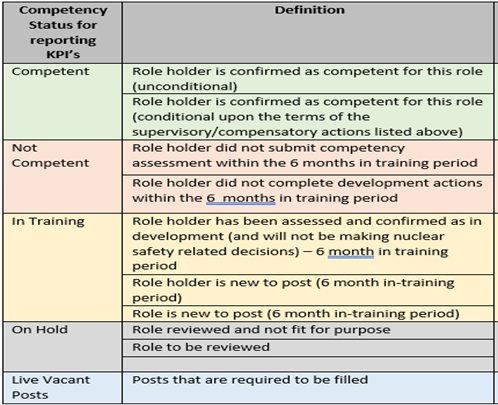
1. There were 49 Role training profiles which need to be reviewed and adopted for NNB GenCo (SZC). The KPIs (Ref. 58) showed 45 had been approved.

Figure 12 - Role Training Profile KPIs

|  |  |  |
| --- | --- | --- |
| **SZC Role and Training Profile (TPR) Review Progress KPI** |  |  |
| Number of SZC Nuclear Baseline Role and Training Profiles requiring review | 36 | 49 |
| Number of Nuclear Baseline TPR Role Profiles approved by SZC line owners | 32 | 45 |
| Percentage of Nuclear Baseline TPR's approved by SZC | 89% | 92% |

1. It was confirmed post intervention by the SZC Performance Improvement Manager that the four outstanding RTPs, for organisational learning, have now all been reviewed (Ref. 61)
2. Feedback from the review of the RTPs has meant that the master competency framework (Ref. 62) is now being reviewed by the NSA, this contains the criteria needed to meet levels 1-4 in each competency, the aim being to complete this by end of Q2 2022 and then update all adopted RTPs with the reviewed competency matrix. There will need to be a process in place to ensure that the matrix and then the master competency framework referenced in the RTPs are kept up to date (rather than updating individual RTPs). The review and update of this matrix is part of the intention in the commitment letter to validate the nuclear baseline competency data.
3. Allocation of the competency levels 1-4 to RTP is not clear. Procedure ‘Create Roles, Competencies and Development Actions’ (Ref. 63) sets out that line managers are responsible for agreeing these with subject matter experts. They select those areas that are directly relevant to the role and assign them a level from 1 to 4 (as specified in Management of Competency Guidance Note 2: Using the Competency Area Framework (Ref. 64)). Having reviewed this guidance note 2 we found that this and the other three guidance notes needed to be reviewed and updated (dated 2012) to reference current procedures claimed for LC12 compliance; this has been raised as an AFI1 in the self-assessment.
4. There are 275 NNB GenCo (HPC) RTPs available. There is a nuclear baseline RTPs priority list (Ref. 65). Within this spreadsheet there are a total of 69 RTPs of which there are 14 identified for the future. It is not clear when the 14 will be needed and their priority. Also, the NNB GenCo (SZC) list uses the term ‘role owners, as opposed to ‘subject matter experts’ used in the HPC list.
5. The process for deciding who is a subject matter expert, or who the subject matter experts are, is not clear. A definition of a subject matter expert is not set out in the procedures. NNB Genco (SZC) explained that those who are at competency level 4 should be assigned the role of subject matter expert. This needs to be set out in the procedure and is captured in the FAP.
6. The definitions of competency compliance are currently not consistently being applied. An example being that the procedure ‘Assess individual competency’ (Ref. 66) states that the options are as follows:
   * Unconditionally competent – the role candidate is confirmed as competent for the role;
   * Conditionally competent – the role candidate is confirmed as competent for the role subject to the development or supervisory actions noted; and
   * In development – the role candidate will not be making unsupervised nuclear safety decisions and has development actions that will be reviewed before this status is changed.
7. The KPI spreadsheet (Ref. 67) states:

Figure 13 - Competency Status Definitions



1. There are no timescales or expectations in the procedure for when someone should complete their development. Although the KPI spreadsheet states that roles in-training have a six month in-training period. NNB GenCo (SZC) need to manage those that are not fully competent/in training to ensure that the development gaps are addressed within agreed timescales. The procedure needs to be reviewed with alignment of the definitions and this is captured in the FAP.
2. In summary we found the procedures lacked clarity in some areas and these need to be addressed as part of the future refinement and strengthening of the current arrangements including how levels of competency are assigned, the role of subject matter experts, when the competency process should commence, and the periodicity of assessments.

##### Nuclear baseline competency compliance

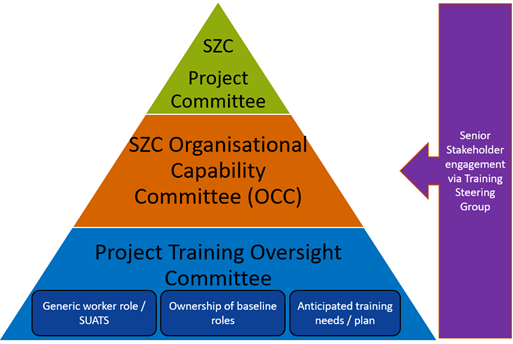
1. The assessment of nuclear baseline post holders role training profiles (RTPs) is monitored using an excel spreadsheet nuclear baseline compliance report (Ref. 68). This shows that as of February 2022, 59% of nuclear baseline role holders demonstrated that they were competent, that is 140 roles against a target of 236 had been assessed as competent. Compliance has moved from 40% in August 2021 to 59%, against a target of 85% as shown in Figure 14.

Figure 14 - Role Training Profile KPIs

|  |  |  |  |
| --- | --- | --- | --- |
| **SZC Organisational Role Compliance KPI's** | | | |
| **Description** | **SZC Role Compliance** | **SZC Role Compliance (%)** | **Achievable Targets** |
| TPR's Competent (A) | 140 | 59% |  |
| TPR's In Training (D) | 55 | 23% | 83% |
| TPR's Not Competent (NR) | 20 | 8% | 91% |
| TPR's to Vacant Posts (V) | 7 | 3% | 94% |
| TPRs on Hold (H) | 14 | 6% | 100% |
| Total number of competence profile (TPR) instances | 236 | 100% |  |

1. However, the nuclear baseline competency compliance data in the spreadsheet needs to be validated for all nuclear baseline posts. This will be a manual process for all 106 incumbents. This is an important validation step before communicating to the business, to ensure it contains credible data. Evidence of the need for data validation was seen during the intelligent customer I-OC1 intervention, when data on training compliance was found to be inaccurate (refer to section 4.6). This is captured in the FAP.
2. As an interim step ahead of moving to My Learning Hub, the data has been put into the teams / SharePoint system to allow the power-BI tool to produce live compliance metrics. The intention is that this system will go live at the end of May 2022 and operate in parallel with the spreadsheet. However, the data still needs to be validated.
3. It was evident that line managers do not have sight of the nuclear baseline competency compliance data, including when training goes out of date, and the organisation is relying on one-to-one discussions between staff and line managers. Once the data has been validated this information can be shared with line managers and provide the line of visibility required.
4. This is part of the current L3 RI 9031 (now downgraded to a L4) and NNB GenCo (SZC) has included the intention to validate the nuclear baseline competency data in its commitment letter. It is noted that as part of the intervention carried out by technical colleagues (Ref. 53) no shortfalls were identified in the competence and qualification of selected staff. The commitment is focused on the organisation reviewing and improving its arrangements, based on current adopted arrangements being in place. Actions required for licensing set out in the FAP (Ref. 37) have been addressed, that is the updating of the FAP following the intervention and the approval of governance ToR for the OCC and MoCC.
   * + 1. Governance
5. We sought to determine whether NNB GenCo (SZC) is able to provide assurance that its staff are competent to fulfil their nuclear safety roles. Performance indicators should be available to provide this assurance. This area therefore looked at the committees and their ToR, and the reporting of competency compliance.
6. The governance arrangements are set out in the draft training strategy with the following hierarchy of committees.

Figure 15 – NNB GenCo (SZC) Committees



* + SZC PPC (in place)
  + SZC OCC (in place)
  + SZC project training oversight committee (PTOC) – to be set up and ToR being drafted
  + SZC training steering group – is being established to ensure the right level of senior stakeholder engagement. ToR have been drafted and will be approved at their first meeting.

1. The PTOC is intended to be stood up at the end of Q2 2022, providing a route to escalate issues to the OCC as required. The process is currently working well now but following lessons learnt from HPC it is felt that standing up the PTOC earlier than needed will strengthen the overall governance arrangements and provide an additional layer of oversight. The draft ToR are to be shared. NNB GenCo (SZC)’s INA function set out the need for this committee to keep the focus on training and competency which we agree is important. A training steering group is also to be set up as an additional layer of governance working across all committees and the draft ToR are to be shared. The training delivery programme ToR were shared (Ref. 69).
2. We observed the first SZC OCC on 2 February 2022. Slide 18 (Ref. 70) contains the competency compliance metrics which were shared at the meeting.
3. We determined that it is evident that lessons have been learnt from NNB GenCo (HPC) in that the setting up of robust and clear governance arrangements is one of the key requirements for driving the right outcomes in this area. The governance arrangements are in development and will form part of ONR’s ongoing regulatory engagement.
   * + 1. Recruitment and appointment processes
4. We sought confidence that there is a structured strategy and plan for appointing resources and adequate recruitment and appointment processes. Also, that there is a sourcing policy (external v internal) and robust screening process and that the effectiveness and performance of the process is evaluated.
5. The current resource strategy (Ref. 44) is being delivered by the nuclear resourcing hub. The nuclear resourcing hub has a recruitment and appointment process (Ref. 71) which was presented by the nuclear resourcing hub at a level 4 meeting on 5 May 2021, see Contact Record (Ref. 72). Three worked examples using recent recruits provided evidence that the processes were being followed within the expected timescales. Screening of candidates is agreed between the hiring manager and the nuclear resourcing hub. The hub carries out CV and telephone screening of applications and short lists are created for the hiring manager to then decide on those to interview with support provided by the hub. The process was found to be as expected.
6. The nuclear resourcing hub (EDF) was launched in January 2021 and works with NNB GenCo (HPC), ENGL and NNB GenCo (SZC) to employ permanent and fixed term employees. There are three dedicated NNB GenCo (SZC) employee on the recruitment team and four on the onboarding team for all nuclear business. The effectiveness and performance of the hub was demonstrated during the I-OC5 intervention. The intention is that the staff working on SZC will migrate across to NNB GenCo (SZC) post GID.
7. The draft training strategy (Ref. 56) supports the resource strategy (Ref. 44). Sourcing is detailed within section 3.3. of the resource strategy, setting out the need to understand available sources of supply. A variety of sources are summarised. NNB GenCo (SZC) has also commissioned a consultancy called MDE to analyse the global skills market and high demand roles identified from NNB GenCo (HPC) (overlaid on a SZC timeline). Global projects analysis will be a good insight for overall resource planning and will provide a summary of where the SZC project sits in the world. This work is to be commissioned in phases. Phase 1 was completed in November 2021 and the other two phases are to be discussed and scope to be agreed. This potentially includes the following:
   * Phase 2 – Identifying convergence of project timelines. What key skills will be exiting the projects, in what volumes and at what time; and
   * Phase 3 – Identify potential sources of talent pools link to project timelines.
8. The development of this work will be part of our ongoing regulatory engagement.

##### Onboarding

1. The assessment included a review of the appointment of two recent candidates: the Safety Director and Technical Director. It also focused on the onboarding of all staff and the Executive/Directors onboarding guide and training and induction programme.
2. On joining NNB GenCo (SZC) a welcome pack is sent to the new starter which sets out tasks to be completed on day one and throughout their induction period. A pdf copy of the welcome pack was provided (Ref. 73) which was found to be comprehensive.
3. The RTP 130 has been adopted from NNB GenCo (HPC) for onboarding GenCo Board members. It has been revised and drafted in a new style (Ref. 74) with four sections, two of which set out competency expectations and training profile and competency demonstration, which includes specific competency theme briefing sessions and directed reading/ themes. The competency demonstration is around four themes as set out in Figure 16.

Figure 16 –themes for competency in RTP 130



1. This document is still in its final draft with the four briefing packs to be produced but is a positive step forward. The document is to be approved and a decision is to be made as to whether only new GenCo Board members are put through the process. The FAP for organisational development includes the approval of RTP130.
2. New GenCo Board directors also need to complete an onboarding guide for directors and independent advisors (Ref. 74). The purpose of this document is to define the process which a newly appointed director must follow in order to become a member of the GenCo Board. Additionally, it sets out the competency requirements for those assigned role and training profile 130 - nuclear licensed GenCo Board member and provides a section for recording competency. Two newly appointed directors have recently used this draft process. The FAP for organisational development includes the approval of the onboarding guide.
3. There were two interviews, the first with the Commercial Director who joined in August 2021 and the second with the Safety, Licensing and Assurance Director who joined July 2021. The key points raised during these sessions include the following:
   * A number of senior level discussions took place ahead of the interview process;
   * Onboarding pack was comprehensive but could have been guided through it and that the self-assessment against the RTPs would have been better done as part of onboarding;
   * The allocation of competency levels 1-4 was believed to be an area that needs to be reviewed and whether there is adequate justification for the selections;
   * Not receiving data on nuclear baseline competency assessments;
   * Agreed need to review competency of team as project develops and that periodicity needs to be set out in the FAP;
   * Attended the Institute of Directors ‘role of directors’ course, although not mandated, and found it to be valuable;
   * Carried out a self-assessment of RTP130 but it has not yet been reviewed or signed off;
   * Tendency for an over reliance on ‘training’ as a measure of competency; and
   * RTPs have not been assessed for the team.
4. We concluded that there was sufficient evidence that the recruitment/appointment and onboarding process was meeting the current needs of the project. This will be part of ongoing regulatory engagement.
   * + 1. Forward strategy for training and on-boarding post (fid) dec 2022
5. The employment model will be adapted at FID when the company ownership will change. However, plans for post FID recruitment will need to be developed to allow roles to be filled as the project grows, including nuclear baseline roles.
6. The forward training strategy – commissioning and operations needs to be developed and is part of the FAP.
   * 1. Comparison with Standards, Guidance and Relevant Good Practice
7. In my judgement, at this stage of the project NNB GenCo’s (SZC) activities as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, SAPs, and TAGs.
   * 1. Status of Regulatory Issues
8. There is one outstanding Regulatory Issue in the assessed areas.
   * + 1. Level 3 RI 9031
9. The nuclear baseline competency compliance was at 40% in August 2021, and this had been the case for some months. Following a Level 4 meeting on the 29 September 2021 it was agreed that a Regulatory Issue would be raised to manage the identified shortfalls in that NNB GenCo (SZC) as an organisation, are unable to demonstrate the competency of its staff. Contact Record (Ref. 76) refers.
10. The identified shortfalls are as follows:
    * SZC does not have suitable arrangements to manage the competency of its staff (including embedded contractors), who could impact on nuclear safety. This includes (but not limited to) role profiles that include general, technical, and behavioural competencies;
    * SZC does not have adequate arrangements for monitoring, reporting, and controlling competency, (e.g. via KPIs and other management information, for individuals assessed as competent, competent with gaps for development, assessment in progress and assessment not started); and
    * SZC is not able to demonstrate that those responsible for assessing competence are supported by senior levels within the organisation;
11. This was due for closure at the end of January 2022. Following a review of the evidence in January a request was made for an extension until the end of March 2022. The evidence for closure of the L3 RI was then reviewed as part of this IOC5 intervention. In summary the intervention concluded the following aspects.

##### Generic worker

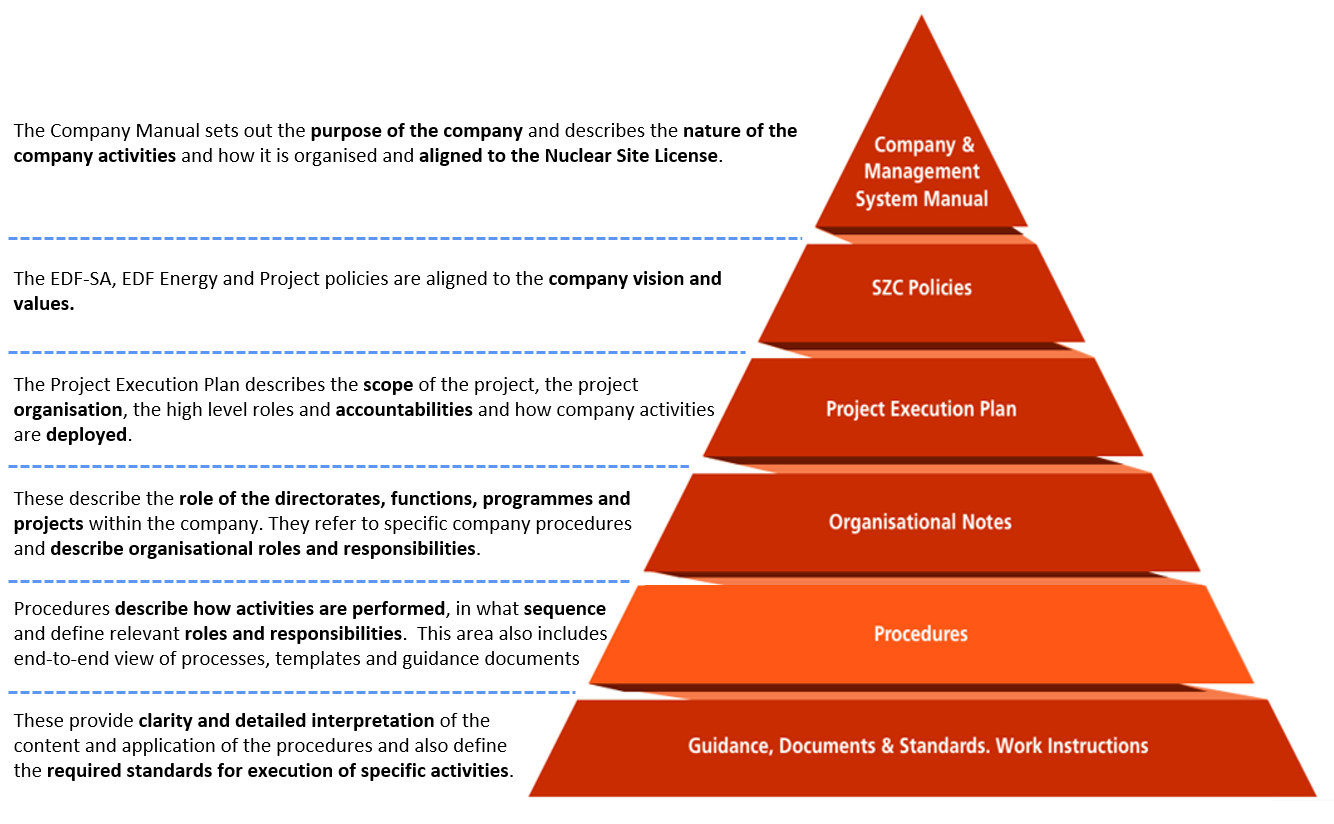
1. The My Learning Hub system has been implemented ahead of NNB GenCo (HPC). This has enabled NNB GenCo (SZC) to move all the generic worker profiles onto the system for staff and embedded contractors. The My Learning Hub system was accessible to all who were asked to demonstrate it during the intervention.
2. We summarised that the generic worker profile has been successfully deployed on the My Learning Hub system, which was proven to be readily accessible by line managers.

##### Nuclear baseline competency compliance

1. 49 RTPs have been reviewed and replicated from NNB GenCo (HPC). The assessment of nuclear baseline post holders role training profiles is monitored using an excel spreadsheet ‘nuclear baseline compliance report’ (Ref. 76). The compliance has moved from 40% (August 2021) to 59% against a target of 85% at February 2022 i.e., 140 roles against a target of 236 have been assessed as competent. The 85% target does not include those in training, which is those who have taken up their role within the last six months. (Note that this data needs to be validated). However, minimum work in relation to nuclear safety is currently being undertaken and the competence and experience of selected staff in technical areas has been validated as part of the intervention by technical colleagues (Ref. 53).
2. The nuclear baseline competency compliance data in the spreadsheet needs to be validated for all nuclear baseline posts (106 incumbents), which will be a manual process. Due to the timescales required to carry out the data validation this element is included in the commitment letter (Ref. 12) which sets out that they intend to achieve this validation by end of March 2023.
3. We concluded that this element of the regulatory issue remains open with the intention to validate the nuclear baseline competency data by March 2023 set out in the commitment letter.

##### Accountability

1. The third element of the regulatory issue is around accountability and clear executive oversight of training and competency. Executive accountability will move from the Safety and Licensing Director to the HR Director via the MoC process. Clear Executive ownership is needed to drive the right behaviours and achieve the right outputs.
2. We concluded that this element of the regulatory issue remains open with the intention to make this change by end June 2022, which is set out in the commitment letter (Ref. 12).
3. In summary, the commitment letter sets out that in order to fully demonstrate the competency compliance arrangements, NNB GenCo (SZC) will validate the nuclear baseline competencies of all role holders and, if required, have clear plans in place to address any identified shortfalls by March 2023. Therefore, we recommended the downgrading of the L3 regulatory issue 9031 to a L4 regulatory issue with the commitment letter and demonstrated progress with My Learning Hub and the generic worker profile. This decision was endorsed by the regulatory issue review meeting on 21 March 2022 based on the evidence submitted (Ref. 77).
   * + 1. Level 4 RI 10650 - closed
4. This was raised following the I-OC5 intervention and sets out the need for the following:
   * a credible FAP
   * for the NNB GenCo (SZC) commitment letter to capture the requirement to validate the nuclear baseline competency data and change the Executive ownership of this topic stream via the MoC process.
5. This was closed following the receipt of a credible FAP and commitment letter (Ref. 12).
   * 1. Summary
6. In terms of compliance with the following Licence Conditions the licensee will do the following:
   * LC10(1): shall make and implement adequate arrangements for suitable training
   * LC12(1): shall make and implement adequate arrangements to ensure that suitably qualified and experienced persons perform any duties which may affect the safety of operations on the site.
7. We consider NNB GenCo’s (SZC) arrangements for compliance with LC10 and LC12 are sufficiently developed for the activities being undertaken to support issue of a nuclear site licence.
8. Evidence provided by NNB GenCo (SZC) against ONR’s expectations for this topic stream includes the recruitment of the Performance Improvement Manager, the training policy, and a draft training strategy. In addition, the success in their adoption of the My Learning Hub System and transfer of all generic role profiles to that system, which is accessible to line managers.
9. In addition, a series of training, SQEP and appointment topic areas were identified in Appendix 2 of the NNB GenCo (SZC) assessment framework Rev 3 (Ref. 6) under which inspectors would gather relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements.
10. Any significant issues identified during the course of topic leads’ assessments would be fed back directly to the relevant organisational capability topic lead. This information would be used to shape ongoing regulatory work and inform the final assessment reports, both within the technical and organisational capability areas.
11. Appendix 2 of the NNB GenCo (SZC) assessment framework Rev 3 asked the following questions regarding training, SQEP and appointments:
    * Have competence requirements for individuals been specified?
    * In your opinion are individuals displaying the appropriate competence to perform their work safely and to the required standard?
    * Are training and development plans in-place, where required?
12. The intervention I-OC5 found that the competence requirements for individuals are specified in the role training profiles that are allocated to posts, and that the 49 role training profiles in use have been reviewed by the organisations’ subject matter experts. The criteria for achieving the competence levels 1-4 are being reviewed by the NSA and the selection of competence levels 1-4 for the role training profiles needs to be clearer i.e. that levels selected within the RTPs relate to the activities being undertaken, this is part of the commitment letter.
13. The competence of individuals is assessed as part of the organisation's competence assessment process. There has been no evidence identified, including in the I-OC5 intervention, that individuals were not competent.
14. Training and development plans are needed to address any shortfalls identified in the nuclear baseline competency assessment process. This is part of NNB GenCo (SZC)’s competency process. However, the current position is that the nuclear baseline competencies of all 106 role holders need to be validated by NNB GenCo (SZC). This is part of a Level 3 RI 9031 (which has now been downgraded to a Level 4) and one of the intentions in the commitment letter, due for completion by March 2023. As part of the validation process, any identified shortfalls will need to have plans in place to manage the shortfalls identified.
    * 1. Conclusion
15. I consider NNB GenCo (SZC)’s training function has proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID. Shortfalls in the nuclear baseline competency arrangements have a clear plan to be addressed which are set out in the commitment letter.
16. Based upon the overall assessment findings in respect of training, SQEP and appointments, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
17. There are several future challenges, where we will be seeking further confidence in NNB GenCo’s (SZC) activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
18. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Quality (including Management Systems)
       1. Scope of Assessment Undertaken
19. The ONR expectations for the assessment are contained within ONR Task Sheet ONR-SZC-TS-20-009 Revision 1 (Ref. 78). The scope of the assessment covers the following areas:
    * management system arrangements
    * quality performance measurement and reporting
    * document and records management
    * intelligent adoption of processes and procedures
    * learning arrangements
    * quality function effectiveness, resources, capability, and competence
    * training
    * forward plans post final investment decision (FID)
    * deviation management
20. For the purposes of this report, an additional area titled Quality Function Governance has been included for clarity. The section titled *Forward Plans post FID* has also been expanded to include Quality Delivery.
    * 1. Applicable Relevant Good Practice
21. The key Relevant Good Practice (RGP) in support of the assessment, includes but is not limited to the following:
    * NS-INSP-GD-017: LC 17 - Management Systems
    * NS-INSP-GD-006: LC 06 - Documents, records, authorities, and certificates
    * IAEA GSR Part 2 Leadership and Management for Safety
    * BS EN ISO 9001: 2015 Quality management systems, Requirement
      1. Assessment Process and Outcomes
22. This quality topic stream (OC5) comprised a regular cycle of Level 4 meetings, interventions, and ad-hoc engagements. Overall, eight Level 4 meetings were held following the NSL application in June 2020. The associated contact records (Refs. 8 and 9) are listed below:
    * ONR-NR-CR-20-224 - SZC OC5 Management Systems Level 4 meeting - 18 June 2020
    * ONR-NR-CR-20-341 - SZC OC5 Management Systems Level 4 meeting - 22 July 2020
    * ONR-NR-CR-20-530 - SZC OC5 Management Systems Level 4 meeting - 2 October 2020
    * ONR-NR-CR-20-918 - SZC OC5 Management Systems Level 4 meeting – 28 January 2021
    * ONR-NR-CR-20-1007 - SZC OC5 Management Systems Level 4 meeting - 3 March 2021
    * ONR-NR-CR-21-304 - SZC OC5 Management Systems Level 4 meeting - 9 September 2021
    * ONR-NR-CR-21-409 - SZC OC5 Management Systems Level 4 meeting - 18 November 2021
    * ONR-NR-CR-21-532 - SZC OC5 Management Systems Level 4 meeting - 21 January 2022
23. Two interventions were undertaken in December 2021 and March 2022. The interventions provided NNB GenCo (SZC) with an opportunity to demonstrate its arrangements for LC6 and LC17 at this stage of the project. The contact records ONR-NR-CR-21-508 (Ref. 9) and ONR-NR-CR-21-618 (Ref. 9) provides detail of ONR’s findings relating to NNB GenCo (SZC)’s quality organisation and arrangements and NNB GenCo (SZC)’s intentions for their future development.
    * + 1. Management system arrangements
24. This area focussed on the need for NNB GenCo (SZC) to develop a management system which gives due priority to safety, so that any actions or decisions taken do not have an adverse effect on safety (Ref. 79).
25. The NNB GenCo (SZC) IMS is described in the management system manual (Ref. 80). It is a single, coherent, and integrated system, whereby the organisation, resources, and processes to enable the organisation’s objectives to be achieved are set out.
26. The management system manual documents and describes how the IMS achieves its objective with a specific focus on processes and procedures. The IMS sees increasing level of detail down through the system from the strategic apex (Figure 17) to the lowest level of business activity and provides increasing levels of understanding from the top-level frameworks to detailed explanation provided in guidance documents.

Figure 17 – SZC IMS ‘pyramid’ Structure

1. During the interventions undertaken, we sampled the NNB GenCo (SZC) IMS and considered it to be a typical hierarchical structure of documentation which incorporates the key features expected by the international management system standards.
2. The structure of the IMS is largely based on the current NNB GenCo (HPC) IMS but has been created in the Orbus iServer – a dedicated software tool for hosting and managing the IMS procedures. Consequently, NNB GenCo (SZC) has led the development of the tool in a number of areas, with HPC adopting the architecture for their project.
3. The IMS and its documents are made available to all staffs via the company intranet. Documents can be found by staff via various routes e.g. by opening the appropriate process page, document indexes and search functions. NNB GenCo (SZC) has confirmed all employees, embedded contractors, and remote contractors will have access to the IMS; this decision is based on learning from NNB GenCo (HPC) and reflects the desire to have one IMS for the totality of the project.
4. NNB GenCo (SZC) intends to further develop the IMS during 2022. We sampled the content of the IMS development plan (Ref. 81) for 2022 during the I-OC8a intervention. The plan is primarily being achieved through five technical development priority workstreams which cover the following elements:
   * licence condition, legislation and key requirements tracking
   * implementation tracking
   * IMS use and effectiveness
   * golden thread & supporting document links
   * document quality assurance and change control
5. Based on the detail of each workstream, the delivery of the foundation functionality, followed by the advanced functionality, the 2022 development plan was considered logical and sufficiently resourced, and funded.
6. Overall, we considered that the IMS structure and the processes and tools being developed, and the forward plan of development for the system were generally adequate for this stage of the project.
   * + 1. Quality performance measurement and reporting
7. This area focussed on the development of effective quality performance measures and reporting. In this regard, we were seeking confidence in the development of measures which can be used to quantify both the efficiency and effectiveness of quality related matters across the project.
8. The PDO quality team are primarily responsible for establishing quality performance KPIs and reporting across the project. However, it is recognised that these measures are broader than the PDO’s span of control and therefore, the Safety Licensing and Assurance Directorate have co-developed a range of measures that reflect the current status of the project.
9. During the interventions undertaken, we sampled a number of measures which are now routinely presented to the IMS review panel (IRP) via the IMS governance dashboard (Ref. 82). Within the documentation, there was clear evidence of measures relating to procedure adoption and IMS training. The minutes of the meeting demonstrated a focus on these matters (Ref. 83).
10. At present, the application of quality performance measures and reporting are limited to the IMS. Further definition of KPIs, development of dashboards and automated monthly reporting via Power BI is ongoing and will be developed commensurate to the stage of the project. However, it is recognised that this will primarily be focused on internal matters e.g., process non-conformances, process owner reviews, and audit outcomes.
11. From a supply chain perspective, as the project matures and a significant number of contracts are placed at FID, we would expect NNB GenCo (SZC) to ensure arrangements are in place to ensure supplier performance and any associated mitigations are appropriately prioritised and managed to support the projects objectives. ONR would expect these measures to be risk and experience informed, with a focus on “right first time” performance.
12. Overall, we concluded that the quality performance measures, and reporting were appropriate for this stage of the project. However, there is an expectation that the introduction of Power BI and advanced functionality to be developed will increase quantity and quality of measures available to the project in the near term.
13. Additionally, there is a specific item in the SZC Quality Strategy - Delivery Plan Pre-FID (Ref. 84) to further develop project and programme quality performance KPIs and reporting mechanisms that are commensurate to the pace of the project.
    * + 1. Document and records management
14. This area focussed on the need for NNB GenCo (SZC) to implement adequate arrangements to ensure that every document required, every record made, every authority, consent or approval granted, and every direction or certificate issued in the future are preserved for 30 years or such other periods as ONR may approve.
15. ONR sought assurance that the arrangements for document and records management are adequate for this stage of the project, that the arrangements will continue to develop in order to be adequate as the project progresses, and that there is a defined forward action plan for continuing development of the arrangements.
16. As with other elements of the quality workstream, NNB GenCo (SZC) is seeking to intelligently replicate the management systems controls, tools, systems, and processes from NNB GenCo (HPC) to effectively manage all documents and records, including those from LC6. A key aspect of this approach is the replication of the Teamcenter, which is the electronic documents and records management system.
17. The primary document for documents and records management is the Documents and Records Management Policy (Ref. 161). Underpinning the documented information policy are a code of practice and series of lower-level procedures that have been approved and implemented. We saw evidence of use of these procedures during a dedicated LC6 Intervention relating to geotechnical records in January 2022 (Ref. 85).
18. During the I-OC8a intervention in March 2022, we confirmed that the procedure for governing interactions with regulators contained the anticipated records, along with the associated retention codes.
19. Within the ‘live’ records retention schedule there was a clear tabulation of the various retention codes with the corresponding expectations. Based on a search of the document, ONR were able to identify a clear link to the retention code referenced in the interactions with regulators procedure. ONR were able to confirm that the corresponding expectations had been cascaded into the Teamcenter metadata for a selection of contact records.
20. Whilst there is clear evidence of the arrangements being developed, during the I-OC8a intervention, we identified an absence of specific training on records management expectations for all staff and therefore, there is a risk to the quality of records generated in the near-term.
21. NNB GenCo (SZC) acknowledged the need to develop the awareness training as per the forward action plan (Ref. 86) and ONR expects it would cover aspects including: the purpose and use of the records retention schedule, retention timescales, and the role of records support officers.
22. Overall, we considered that the arrangements and tools for the management of records were adequate for this stage of the project.
23. NNB GenCo (SZC) will need to ensure that the alliances and the supply chain create, deliver, store, and maintain its documents and records to meet the requirements of LC6 by specifying requirements within the contracts and associated works information, as sampled during the I-OC12 effective specifications intervention (Ref. 87), and performing oversight of delivery.
    * + 1. Intelligent adoption of processes and procedures
24. As previously outlined, NNB GenCo (SZC)’s strategy replicates HPC and, as a consequence, intelligent replication of the IMS arrangements will allow the project to benefit from a mature design and IMS, an experienced supply chain and to maximise competencies developed for HPC.
25. ONR focussed on the need for NNB GenCo (SZC) to establish adequate arrangements and governance to ensure procedures are being effectively adopted such that they provide a framework for the delivery of future activities.
26. In support of their intelligent adoption strategy, and to ensure that there is adequate oversight of procedure adoption activities, a dedicated tool (Ref. 88) has been established to drive accurate and consistent tracking of adoption activities. Underpinning the procedure adoption plan is a specific work instruction (Ref. 89) which has been developed to provide instructions for updating the tool.
27. During the interventions undertaken by ONR, we sampled the procedure adoption plan and saw evidence of the document progressively evolving to rationalise the contents and provide greater clarity on target dates. Overall, the application and control of the plan was considered to be a fit for purpose tool to manage the adoption of procedures from NNB GenCo (HPC).
28. However, during both interventions ONR noted a number of omissions and inaccuracies in the procedure adoption plan contents. For example, procedures adopted in phase 1 and now live within the IMS had missing data, and items which are no longer going to be delivered in phase 2a did not have revised completion dates.
29. Whilst ONR recognises the procedure adoption plan is a complex and live document and the impact of these findings is not significant, NNB GenCo (SZC) needs to be satisfied with the accuracy and completeness of data within the tool moving forward.
30. In addition to sampling the procedure adoption plan, we also sampled the outputs of the adoption process. From a review of the IMS there was evidence of adopted procedures being included in the IMS and used by other aspects of the project. This was validated during the effective specifications (Ref. 87) and culture (Ref. 90) interventions which were supported by the quality inspector.
31. 349. Given the pace of the project and the competing demands placed upon NNB GenCo (SZC) staff, ONR considers there to be a risk to the sustained delivery of adoption activities. During the I-OC8a Intervention in March 2022, we observed delays to the delivery of Phase 2a activities to date, which challenged the overall completion date for the sub-Phase. Consequently, NNB GenCo (SZC) have enhanced their governance and oversight of procedure adoption for future phases.
32. For the procedures now adopted into the IMS, post-implementation reviews have not yet started due to a focus on procedure adoption. However, NNB GenCo (SZC) is in the process of developing a rolling programme of reviews, commencing in 2022, that will meet the expectations of the updated management system manual.
33. From a governance perspective, the IRP has provided oversight to the continued suitability, integrity, and effectiveness of the IMS in order to meet the needs of the SZC project on a risk based graded approach, with a key aspect of this role being fulfilled through oversight of adoption activities.
34. Overall, we considered that the arrangements in place for procedure adoption are fit for purpose. There is evidence of effective delivery and oversight in this area, but we recognise that there are competing demands for staff time and sustained delivery of the procedure adoption plan will be a future area of focus.
    * + 1. Learning arrangements
35. This area focussed on the how the NNB GenCo (SZC) quality function is utilising learning to inform their current and future activities. In this context, the quality function is seeking to promote the collection and assessment of internal and external lessons learnt, in order to influence the definition and deployment of the high-quality standards for the project.
36. The overarching organisational arrangements and tools for learning were not assessed in detail within this workstream. The I-OC7 organisational learning workstream (Refer to Section 4.9) was responsible for this assessment.
37. Within the quality function organisational learning is delivered by the Safety, Licencing and Assurance Directorate, with strategic quality lessons learned from NNB GenCo (HPC) being incorporated into the NNB GenCo (SZC) quality strategy (Ref. 91).
38. To facilitate learning NNB GenCo (SZC) has implemented the ‘Insight’ system in conjunction with NNB GenCo (HPC) for recording and applying lessons learned. The Insight system includes all learning records from NNB GenCo (HPC), including those from the legacy organisational learning and non-conformance management system (OLIM) system.
39. To ensure the effective oversight of learning, NNB GenCo (SZC) has also implemented a learning screening committee sponsored by the Pre-Operations Director, to ensure learning reports (LRs) are systematically reviewed, ensure appropriate ownership of actions, and ensure actions are addressed.
40. During the interventions undertaken we sought evidence of LRs that had been raised which were pertinent to quality. As an example, NNB GenCo (SZC) provided an overview of LR23377 (Ref. 92), which related to the transfer of responsibility for the IMS, associated resource, contract support and LC17 from PDO quality to the quality assurance function within the Safety Assurance and Licencing Directorate. We considered the learning report and management of the identified action to be adequate.
41. Whilst there was clear evidence of LRs being raised by the quality function, NNB GenCo (SZC) confirmed there had not been any LRs raised by the wider business that were pertinent to the quality of documents. However, ONR inspectors had identified and reported a number of such issues. Given the primary mechanism for providing feedback on the IMS processes and procedures is via LRs, ONR noted that this was surprising but acknowledged the work which has commenced to simplify the feedback mechanisms within the IMS. The key development is a live feedback functionality within the IMS which will negate the need for LRs to be raised to identify minor changes to documents, making it easier for personnel to highlight.
42. Whilst the majority of quality related learning at this stage of the project is arising from internal learning, NNB GenCo (SZC) envisaged that this will expand to include lessons from the supply chain and external inspection bodies, and to ensure wider opportunities for learning are captured. Moreover, from a future contracting perspective, lessons learned from NNB GenCo (HPC) will have to be considered by the supply chain in their arrangements, in particular the prerequisite arrangements prior to the start of manufacturing.
43. Overall, we determined there was clear evidence of learning influencing the current and future approach to quality related activities and concluded that the arrangements in place for the collection, assessment and dissemination of quality related learning are adequate for the current stage of the project.
    * + 1. Quality function effectiveness, resources, capability, and competence
44. This area focussed on the resources, capability and competence required by the NNB GenCo (SZC) quality function to effectively discharge its duties. ONR sought confidence in the credibility of current and future resource requirements, clarity of role profiles and demonstrable progress with recruitment.
45. The NNB GenCo (SZC) organisation is described in the company manual (Ref. 33) and supporting project execution plan (Ref. 31). The proposed operating structure creates a strong client that is capable of controlling scope and schedule change, monitor risk and assure nuclear, environmental, and industrial safety, and provide clear accountability to the client’s PDO for the engineering, procurement, construction, and commissioning of the agreed scope for SZC.
46. The overall quality function scope and resourcing is split into two distinct areas: the Safety, Licensing and Assurance Directorate and the PDO. For both areas, the organisation design and subsequent recruitment requirements for 2022 are currently reflected in the nuclear baseline v15 (Ref. 93) and have been endorsed as part of the annual planning cycle.
47. The NNB GenCo (SZC) PDO quality department ensures that the SZC quality requirements are delivered via the three programmes (Nuclear Island (NI), Conventional Island and Balance of Plant (CI-BoP), Civil Works (CW)) and their respective supply chains. Based on learning from NNB GenCo (HPC), the PDO quality department is currently seeking to move to a model where the department is arranged into four teams and a Management of Chance (MoC) submission is being developed to seek approval for this change.
48. The Safety Licencing and Assurance Directorate will have oversight of the quality performance of the SZC project and therefore will itself include a quality assurance function. The directorate provides an independent reporting and escalation route for quality issues and any aspect of the project which affects safety.
49. Following the I-OC8 intervention in December 2021, ONR raised RI-10562 which sought further clarity on NNB GenCo (SZC)’s quality function resourcing for 2022. In response to the RI, NNB GenCo (SZC) provided a series of supporting documents to quantify the future resource requirements, including target roles and recruitment timescales.
50. During the I-OC8a intervention in March 2022, we sought further information in relation to the documentation provided. It is apparent from the evidence sampled that the PDO quality function has the greater near-term recruitment need, with 8 FTEs anticipated to be in post by the end of June 2022, and 22 by the end of December 2022. ONR were provided with role profiles for the near-term positions (Ref. 94), which clearly define the principal accountabilities, skills, qualifications & experience required of applicants.
51. ONR considers there to be a risk associated with the timely recruitment of staff, but NNB GenCo (SZC) have identified a number of actions to mitigate the risk, e.g. recruiting suitable candidates earlier than necessary if deemed suitable for approved roles.
52. For the quality function resourcing beyond 2022, NNB GenCo (SZC) confirmed that initial estimates have been developed and included in the quality strategy roadmap (Ref. 95) based on demonstrated performance from NNB GenCo (HPC), but the actual resource requirements will need to be validated during future planning cycles to ensure that they are representative of the project’s status.
53. Overall, we consider the current level of resource to be adequate to deliver the current programme of work and there is a clear programme of future recruitment. However, should unplanned activities arise, prioritisation will be required to ensure resources are used to best effect.
54. On the basis of the above, I am therefore satisfied that NNB GenCo (SZC) have adequately addressed RI-10562 and the issue has therefore been closed.
    * + 1. Quality function governance
55. This area focussed on the effectiveness of the governance arrangements utilised within the quality function. ONR sought confidence in the framework of rules, policies, processes, procedures, and meetings used to direct or control the quality function’s activities.
56. Following the I-OC8 Intervention in December 2021, ONR raised RI-10560 which sought further to understand the maturity of NNB GenCo (SZC)’s governance and oversight of the quality function. In response to the RI, NNB GenCo (SZC) provided a series of supporting documents which outlined how the governance of the quality function is being delivered and evidence to support this.
57. During the I-OC8a intervention in March 2022, we sought further information in relation the information provided. It is evident that governance of the quality function is primarily achieved through three key governance committees which include; the IMS review panel (Ref. 96), the quality forum (Ref. 97) and the quality working group (Ref. 98). In addition to these formal governance panels, there are a number of localised forums e.g. PDO quality team meeting, which provide day-to-day oversight of delivery within the quality function.
58. The governance meetings are not hierarchical in nature and, as such, do not constitute a formal escalation route from one meeting to another. However, escalation is achieved through the respective meeting chairs, who are directors of the organisation and are able to expedite matters accordingly.
59. From the information sampled, ONR was able to obtain evidence which demonstrated the quality forum and quality working group have been constituted and have begun to meet on a periodic basis. However, from a sample of the meeting minutes, it is not apparent what the key decisions, challenges and outputs were.
60. At present there is no single document which illustrates the overall governance of the quality function. NNB GenCo (SZC) is intending to develop a quality organisation note, which will fulfil this purpose and this activity is explicitly listed in the FAP.
61. Overall, we consider the governance arrangements that have now been developed and deployed to be appropriate for this stage of the project. However, we expect that these arrangements will continue to evolve as the size and scope of the quality function increase, and this will be a future area of focus for ONR.
62. On the basis of the above, I am therefore satisfied that NNB GenCo (SZC) have adequately addressed RI-10560 and the issue has therefore been closed.
    * + 1. Training
63. This area focussed on how NNB GenCo (SZC) quality function is developing and delivering quality awareness training and broader quality-owned training to the wider organisation. ONR sought confidence that NNB GenCo (SZC) is able to demonstrate that all personnel, including those performing quality roles and activities, are appropriately trained and competent.
64. NNB GenCo (SZC) utilises an online training platform called My Learning Hub which includes mandatory, auto enrolled, and self-enrolment training courses. Training courses available include quality management awareness (focussing on general quality assurance specification and QN100, and Direction Industrielle (DI) principles and UK addendum), CFSI awareness training and an introduction to the lifetime quality records (LTQR) procedures.
65. In addition, there is specific IMS training that is mandatory for all staff. During the I-OC8a intervention, we sampled the training records for the IMS training. From a review of the training statistics, it was evident that there had been a significant increase in the IMS training completion rates, i.e. from ~50% in December 2021 to ~85% in March 2022, with information being derived from a newly created Power BI Dashboard (Ref. 99).
66. As identified during the interventions undertaken, the ownership and oversight of quality owned training remains an area for improvement. To date, NNB GenCo (SZC) has not progressed the adoption and implementation of wider quality training for the project e.g. CFSI awareness training and the introduction to LTQR procedures.
67. NNB GenCo (SZC) confirmed the development of quality related training will be delivered via the development of a 'One Quality' culture strategy and associated training modules, and this activity is explicitly identified in the forward action plan. ONR recommended that NNB GenCo (SZC) considers what quality awareness training would be provided to all new starters, in addition to refresher sessions for existing staff.
68. As the project progresses, the quality function will be responsible for supporting a number of CFSI mitigations including quality planning, supplier selection, and supplier training. Therefore, NNB GenCo (SZC) will be required to provide training for its supply chain on CFSI and ensure mitigations are in place throughout all levels of the supply chain through the contractual cascade of requirements and oversight.
69. Overall, we concluded that the quality related training was broadly adequate for this stage of the project. However, there is an expectation that the quality function will further develop quality awareness for all staff and more targeted quality training on matters including but not limited to CFSI awareness training and an introduction to LTQR procedures. These items are identified in the forward action plan.
    * + 1. Quality function delivery and forward plans post FID
70. This area focussed on the adequacy of NNB GenCo (SZC)’s quality function delivery and the credibility of the forward delivery plan. ONR sought confidence in the delivery of activities, including project & programme quality, systems & tools, and supply chain quality management.
71. Following the I-OC8 intervention in December 2021, ONR raised RI-10561 which sought further clarity on NNB GenCo’s (SZC) forward delivery programme and expectations. In response to the RI, NNB GenCo (SZC) provided a series of supporting documents which outlined progress with delivery to date, and a revised programme of activities for 2022 and beyond.
72. During the I-OC8a intervention in March 2022, we sampled evidence of delivery from a number of items contained within the quality strategy roadmap, namely; LC6/LC17 MoC, quality assurance team resource requirements, and the updated process owners and author training pack. In all instances, there was evidence of delivery with examples provided to ONR, e.g. slides from the process author briefing held 28 February 2022 (Ref. 100).
73. The minutes from the quality working group held 24 February 2022 (Ref. 101), were also sampled, and provided evidence of the meeting discussing agreed updates, issues, and risks to delivery of the plan. Within the minutes of the quality working group there was evidence of a revised approach being agreed for the development of the standard PQCP template. NNB GenCo (SZC) confirmed the PQCP for long lead items had been developed based on the NNB GenCo (HPC) approach but given the lag-time before the standard PQCP template will be required, the activity had been delayed allowing for a focus on higher priority activities.
74. The revised internal audit programme (Ref. 102), which reduced the planned number of in-year audits from 40 to 17 was sampled. This programme, which is risk-informed, is considered credible and reflects the level of internal audit resource within the organisation. Evidence was provided for the audit of HR (people) against agreed procedures to validate and verify the arrangements adopted within the SZC IMS and meets the expectation of management system standard ISO 9001:2015.
75. From the information sampled during the intervention, there is evidence of sustained delivery, in addition to greater oversight and control of the quality strategy roadmap.
76. Looking ahead, an updated quality strategy roadmap has been developed with activities going beyond 2022 (Ref. 84). We sampled the plan which now includes greater detail against the key areas of focus, e.g. process and documentation, develop approach for qualification, mapping and management, and project and programme quality.
77. ONR observed that there are a significant number of activities (Approx. 70) to be delivered by end of June 2022 and considered there to be a risk to delivery due to a significant number of the activities being delivered by functions not controlled by the quality function.
78. In the longer term, NNB GenCo (SZC) recognises that the value of the quality strategy roadmap will diminish, and in the fullness of time, the document is likely to be replaced by the quality organisation note and SZC project - guide to quality.
79. Overall, we consider that the evidence of sustained delivery, in addition to a revised quality strategy roadmap, which is considered credible, was appropriate for this stage of the project.
80. On the basis of the above, I am therefore satisfied that NNB GenCo (SZC) has adequately addressed RI-10560 and the issue has therefore been closed.
    * + 1. Deviation management
81. This area focussed on the need for NNB GenCo (SZC) to implement adequate arrangements to ensure non-conformances are identified, reported, and managed by appropriate planned arrangements to satisfactory closure. In this context, NNB GenCo (SZC) defines a non-conformance as a non-fulfilment of a requirement in accordance with ISO9000:2015.
82. In line with the project’s overarching strategy to intelligently adopt arrangements from NNB GenCo (HPC), a number of arrangements have been adopted relating to the management of non-conformances. These arrangements include manage non-conformance, manage manufacturing non-conformance, and manage contractor site non-conformance.
83. These arrangements have been adopted as per the procedure adoption plan and are reflected in the IMS. It is noted that as the project is at an early stage, there has been limited use of the arrangements thus far. However, when identified, either by the supplier, audit or inspection, non-conformances shall be recorded and tracked to completion by the responsible owner.
84. Process non-conformances will be recorded and tracked via Insight, with CCIS/SWITCH being used for the management of manufacturing and site non-conformances.
85. Overall, we considered that these arrangements and tools were adequate for this stage of the project. However, it is recognised that the arrangements will need to be reviewed as their application increases.
    * 1. Comparison with Standards, Guidance and Relevant Good Practice
86. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities, as defined and documented, have proportionately developed the essential features of such arrangements which are described in relevant international management systems standards, SAPs, TAGs and TIGS.
87. NNB GenCo (SZC) achieved certification of their management system to international standard BS EN ISO 9001: 2015 from a UK accredited certification body in March 2022.
    * 1. Status of Regulatory Issues
88. During the assessment process a number of regulatory issues were raised. I am satisfied that NNB GenCo (SZC) has adequately addressed the issues and therefore all issues have been closed.
    * 1. Summary
89. This aspect of the report has been written to support the decision by the Chief Nuclear Inspector as to whether a NSL should be granted to NNB GenCo (SZC).
90. In the quality workstream, ONR has carried out sufficient engagements with NNB GenCo (SZC) and sampled sufficient and relevant evidence to be able to carry out this assessment and to reach the following conclusions.
91. ONR considers that NNB GenCo (SZC) has:
    * Implemented adequate management system arrangements, including quality management arrangements;
    * Developed and implemented adequate records management arrangements via Teamcenter;
    * Provided evidence of adequate arrangements, evidence, documentation, and organisational capability (quality function) during L4 engagements and interventions; and
    * Established adequate quality functions to support the organisation.
92. Therefore, in terms of compliance with LC 6 (Documents, Records, Authorities and Certificates) and 17 (Management Systems), I consider NNB GenCo (SZC)’s arrangements for compliance with LC6 and LC17 are sufficiently developed to support issue of a NSL.
93. The assessment has identified that there a number of areas which require further development and implementation which, if not, adequately addressed have the potential to impact on future delivery.
94. ONR assessment framework (Ref. 6) for Sizewell C licensing identified a series of organisational capability topic areas under which we gathered relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements. The question for the OC5 topic stream on quality including management systems was:
    * Are there adequate arrangements in-place or being developed to safely control the work?
95. In my opinion, I have seen sufficient evidence to conclude the management system provides adequate arrangements to safely control the work.
    * 1. Conclusion
96. I consider NNB GenCo (SZC)’s quality arrangements are proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
97. Based upon the overall assessment findings in respect of quality (including management systems), in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a NSL holder. ONR will seek ongoing confidence in the delivery of the forward action plans and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
98. There are future challenges where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the forward action plans and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
99. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Safety culture
       1. Scope of Assessment Undertaken
100. Safety (and security) culture is one of the focus areas for seeking assurance that the licence applicant has suitable and sufficient organisational structures, resources, and competencies to lead and manage safety effectively. These focus areas are listed in the section 89 of the ONR document Licensing Nuclear Installations.
101. The purpose of the OC8 topic stream on safety culture development was to assess whether NNB GenCo (SZC) has developed and implemented adequate arrangements for safety culture development to justify the granting of a nuclear site licence and whether credible plans are in-place for the arrangements maturing post nuclear site licence grant.
102. The ONR expectations for the assessment are defined in the Task Sheet ONR-SZC-TS-20-010 (Ref. 103). The scope of the assessment covers the following areas:
     * nuclear safety culture strategy (including values and behaviours) (Methodology area 1)
     * forward plan for ramp-up post FID (Methodology area 1);
     * resources and capability (Methodology area 2);
     * project culture appropriate for the phase of the project (methodology area3);
     * expectations for manufactures and contractors (Methodology area 3)
     * senior leadership commitment, visible leadership, and appropriate training (Methodology area 4)
     * self-assessment process and appropriate measures (Methodology area 5)

Applicable Relevant Good Practice

1. The key RGP in support of the assessment, includes but is not limited to the following:
   * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020
   * Licensing Nuclear Installations, Rev 6, November 2021
   * Safety Culture Guide for Inspectors, NS-INSP-GD-070, December 2019, Revision 2
   * IAEA GSR Part 2, Leadership and Management for Safety
   * A Harmonized Safety Culture Model. IAEA Working Document, May 2020
   * IAEA SRS 74: Safety Culture in Pre-Operational Phases of Nuclear Power Plant Projects, IAEA 2012
2. This relevant good practice was used while taking into account the activities being carried out or planned by NNB GenCo (SZC) at this point of the assessment.
   * 1. Assessment Process and Outcomes
        1. Regulatory interaction
3. During the assessment process we held three level 4 meetings as follows (Refs. 8 and 9):
   * ONR-NR-CR-20-700, 19th November 2020
   * ONR-NR-CR-21-171, 23 June 2021
   * ONR-NR-CR-21-447, 2 December 2021
4. We performed I-OC10 intervention on safety culture development in February 2022 (ONR-NR-CR-21-548, Ref. 9).
   * + 1. Nuclear safety culture strategy
5. We sought confidence that NNB GenCo (SZC) is establishing the strategies, policies, plans, goals, and standards for safety and ensuring that they are delivered throughout the organisation.
6. NNB GenCo (SZC) shared a draft of the culture strategy during Level 4 interactions. All our comments were incorporated into the final version of the culture strategy that was approved by the OCC on 21 March 2022 (Ref. 104). This culture strategy is yet to be endorsed by the PPC, which is planned in May 2022. However, this assessment shows that whilst this version of the culture strategy has been endorsed recently, many of its elements have already been implemented.
7. This strategy is owned by the Safety, Licensing and Assurance Director. The OCC will provide governance and oversight of SZC project culture performance.
8. This strategy is directly linked to the SZC company manual (Ref. 33), which declares nuclear safety and environmental management as the overriding priority for the organisation and lists the SZC project values. This strategy is also closely linked to the SZC organisational learning strategy (Ref. 105)
9. The culture strategy states that it provides the framework on which NNB GenCo (SZC) will develop its culture to ensure that all safety, environmental and security matters receive the attention warranted by their significance. The key elements of this framework are as follows:
   * safety culture
   * security culture
   * environmental culture
10. NNB GenCo (SZC) is using the same values as NNB GenCo (HPC) and there is a clear mapping between these values and relevant good practice, i.e., World Association of Nuclear Operators (WANO) Nuclear Safety Culture Traits.
11. The proposed culture framework draws upon existing and planned workstreams at SZC:
    * safety, security, and environmental conscious leadership
    * focus on quality
    * intelligent replication of HPC
    * active learning
    * clear and open communications
    * accountable decision making

Figure 18 – NNB GenCo (SZC) Culture Framework

Diagram

Description automatically generated

1. We are satisfied with the content of the culture strategy.
   * + 1. Forward plan for ramp-up post FID
2. We sought to understand what the forward plan for fostering a positive safety culture in the future, considering the ramp-up of activities post-FID and learning from existing nuclear new build projects.
3. NNB GenCo (SZC) has developed its mobilisation model to describe how the SZC culture will be established, educated, enacted, and evaluated within the SZC project. The key elements of this model are as follows.

Figure 19 – NNB GenCo (SZC) Culture Mobilisation Model

Text, application, letter

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1. This model is supported by the culture FAP, which sets the key activities to be completed before FID (Ref. 106). This also includes a commitment to develop a post-FID culture strategy. We were satisfied with these plans created by NNB GenCo (SZC).
   * + 1. Resources and capability
2. We sought confidence that NNB GenCo (SZC) has adequate resources and capability to foster and sustain a positive safety culture.
3. Supported by senior executives, culture development resides with the performance improvement manager who developed the existing culture strategy. The role of SZC culture lead is being advertised and recruitment is expected post-FID. Individual aspects of the framework are owned by the process licence condition owners and the cultural aspects of these will be delivered through collaboration across the project.
4. NNB GenCo (SZC) shared a list of safety culture related competencies (Ref. 107). These competencies fall into area of incident/accident investigation, error reduction techniques, organisational learning, coaching and mentoring staff, and safety culture. We were satisfied with these competencies; however, we noted that the list of standards that was adopted from HPC needs to be reviewed in line with the common competency project run by Nuclear Skills Alliance. This is captured in the training and competency FAP (Ref. 37).
   * + 1. Project culture appropriate for the phase of the project
5. We sought confidence that NNB GenCo (SZC) has established adequate arrangements to develop and monitor a positive safety culture.
6. NNB GenCo (SZC) intends to replicate good practice from HPC. The SZC performance improvement manager is regularly attending HPC’s community of good practice for nuclear safety culture to identify any applicable learning.
7. The next step will be the creation of a NNB GenCo (SZC) specific culture steering group (project culture forum) and replication of HPC’s community of good practice with SZC project’s nuclear safety champions as well as key contractors’ (alliance) single points of contact.
8. These plans for future development are captured in the FAP.
   * + 1. Expectations for manufacturers and contractors
9. We sought confidence that NNB GenCo (SZC) has adequate resources and capability to foster and sustain a positive safety culture.
10. NNB GenCo (SZC) shared an advanced draft of nuclear safety culture requirements (Ref. 108) that are prepared together with NNB GenCo (HPC). On the basis that there will be no contracts put in place in the foreseeable future, we consider that the status of the expectations for manufacturers and contractors is proportionate to the overall development of the SZC project. Completion of this document is captured in the culture FAP (Ref. 106).
    * + 1. Senior leadership commitment, visible leadership, and appropriate training
11. We sought confidence that NNB GenCo (SZC) demonstrates senior leadership commitment, visible leadership and provides appropriate training related to safety.
12. We interviewed a sample from the NNB GenCo (SZC)’s leadership as follows:
    * Operations Director
    * Head of Environment, Decommissioning and Radiation Safety
    * Conventional Environment Lead
    * Project Delivery Organisation (PDO) Quality Lead
    * PDO Quality Programme Director
13. We asked questions around training, project values, consideration of safety/quality/environment, leadership for safety, challenge, workload, and supply chain.
14. From the sample that we interviewed, we concluded that there is adequate evidence of senior leadership commitment to safety and “right first time” approach. The values are visible and known by the interviewees, learning is valued, prioritisation is used to resolve competing goals, and people appeared empowered to challenge. It was also clear that the SZC project is undergoing a period of intensive work and some people are working long hours. Environmental protection is now considered more holistically; however environmental culture is yet to be established and is a future area of focus for the Environment Agency primarily, as well as being an area of interest for ONR. Examples of senior executive support for environment were provided. There is still some way to develop expectations for the site workers and contractors.
15. We were satisfied with the outcome of our interviews; however, we recognise that the SZC organisation is still developing and that more people from non-nuclear backgrounds are likely to be recruited.
16. Using learning from HPC, NNB GenCo (SZC) introduced daily safety messages, which are carried out at the start of every meeting to ensure safety remains at the forefront of people’s minds. These messages are based on a variety of safety themes, such as general safety, quality, construction safety, industrial safety, environmental safety, nuclear safety, psychological safety and mental health, travel safety, SZC specific or topical subjects. We consider these safety messages an important part of the leaderships commitment to safety, and we observed multiple instances of their delivery during our licensing interactions with NNB GenCo (SZC).
17. NNB GenCo (SZC) shared its training documents related to safety culture.
18. Learning objectives for generic induction E-Learning (Ref. 110) contain a dedicated section on what makes the nuclear industry different from other industries and on identification of the principles of nuclear safety. The generic induction revision is captured in the training and competency FAP (Ref. 37). Learning objectives for SZC site induction (Ref. 110) contain parts on behaviours that support a strong safety culture, key security considerations for workers on site, and reporting an accident or near miss.
19. The draft SZC site induction presentation (Ref. 111) covers several important aspects of safety culture. It sets up key principles of health and safety, which include reporting culture and local emergency arrangements. The introduction notes set the tone about accidents with nuclear implications, latent errors and safety culture that needs to be embedded to ensure that these are prevented. NNB GenCo (SZC) confirmed that the site induction training is now approved and being used albeit there is a limited presence on site. The application of the site induction process was also assessed as part of the LC8 and LC9 intervention which took place at the SZC site in January 2022.
20. The HPC training presentation for general foundation Part 1: Nuclear Safety Culture (Ref. 112) was prepared by the Nuclear Skills Alliance. It covers safety culture in more detail. It lists major nuclear accidents and links them to safety culture. It describes special characteristics of nuclear technology, defence in depth and then focuses on human error, and error reduction techniques. For safety culture, the training introduces the concept of organisational culture and presents WANO’s ten traits of a healthy nuclear safety and quality commitments including right first-time principle. The five project values and supporting behaviours are then presented. NNB GenCo (SZC) intends to translate this training for SZC needs. We noted that most of the presentation slides are directly usable for NNB GenCo (SZC). This task is captured in the training and competency FAP (Ref. 37).
21. NNB GenCo (SZC) stated that the leadership induction pack is still under development. This activity is captured in the culture FAP (Ref. 106).
22. We were satisfied with the training materials, noting that further development and delivery of safety culture related training is an important area of focus for the next stage of the SZC project.
    * + 1. Self-assessment process and appropriate measures
23. We sought confidence that NNB GenCo (SZC)’s processes contain measurement, assessment, and improvement of leadership for safety and of safety culture.
24. NNB GenCo (SZC) provided evidence of holding regular surveys. The Annual ‘My EDF’ is a survey designed for the whole EDF group and enables a comparison to be made with other organisations. Quarterly pulse check surveys are designed specifically for Sizewell C and provide a regular snapshot.
25. These surveys were accompanied by a message from the Managing Director or HR Director (Refs. 113-116). The latest ‘My EDF’ survey was fielded via an online questionnaire between 3 November and 3 December 2021. The overall results are well above UK benchmark. However, there is an apparent steady decline in the workload satisfaction (Ref. 117).
26. Further self-assessment activities and creation of appropriate measures are captured in the culture FAP (Ref. 106).
27. We were satisfied with the evidence presented on self-assessment process and appropriate measures.
    * + 1. Comparison with standards, guidance, and relevant good practice
28. ONR’s SAPs for nuclear facilities (Ref. 2) contain four high level inter-related LMFS principles. These principles and the more detailed SAP elements with respect to NNB GenCo (SZC)’s safety culture development (as summarised above) have been considered, as follows:
    * MS.1 Leadership
      + Leadership – establishing the strategies, policies, plans, goals, and standards for safety and ensuring that they are delivered throughout the organisation (58): culture strategy;
      + Engagement (59): Established in culture strategy, confirmed in interviews;
      + Oversight of safety performance (60): Captured in culture FAP; and
      + Management system supporting a positive safety culture (61): SZC company manual.
    * MS.2 Capable organisation
      + Adequate human resources (62): Existing Performance and Improvement Manager, future resource is captured in culture FAP
    * MS.3 Decision making
      + Safety performance indicators (74): Structured reporting of organisational learning and culture to the project committee is captured in Culture FAP.
    * MS.4 Learning
      + Effective learning processes (75): Learning and culture strategies are interconnected;
      + Learning from a range of sources (76): Culture surveys, commitment in culture strategy; and
      + Learning from external sources (77): SZC is using learning from HPC and other EPR projects.
29. The IAEA document GSR Part 2 Leadership and Management for Safety (Ref. 162) contains the following key requirements on culture for safety:
    * Requirement 12: Individuals in the organization, from senior managers downwards, shall foster a strong safety culture. The management system and leadership for safety shall be such as to foster and sustain a strong safety culture;
    * Requirement 13: The effectiveness of the management system shall be measured, assessed, and improved to enhance safety performance, including minimizing the occurrence of problems relating to safety; and
    * Requirement 14: Senior management shall regularly commission assessments of leadership for safety and of safety culture in its own organization.
30. In my judgement, at this stage of the project NNB GenCo’s (SZC) activities as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, SAPs, TAGs and TIGs for safety culture development.
    * 1. Status of Regulatory Issues
31. There is one outstanding regulatory issue in the assessed areas.
32. We raised a Level 4 regulatory issue 10633 to address the following shortfalls in safety culture development against the licensing expectations:
    * the culture strategy has not been approved yet
    * the FAP is still in the development stage
33. At the time of writing this this assessment report, the culture strategy (Ref. 104) and culture FAP (Ref. 106) have been approved by the OCC, which makes the regulatory issue nearly complete. For the regulatory issue to be closed, a formal approval by the PPC (expected in May 2022) is still required. However, this does not undermine my conclusion for this assessed area.
    * 1. Summary
34. NNB GenCo (SZC) provided the following evidence against ONR expectations for the OC8 – Safety Culture Development Sizewell C licensing topic stream:
    * SZC company manual clearly articulates overriding priority of nuclear safety and environmental management
    * SZC culture strategy has been developed
    * NNB GenCo (SZC) uses the same values as HPC and can demonstrate their mapping to relevant good practice
    * Culture FAP has been developed.
    * There is evidence of senior leadership commitment
    * NNB GenCo (SZC) is holding regular surveys
35. Key areas for improvement / further safety culture function development are as follows:
    * post-FID culture strategy development
    * requirements for contractors
    * revision of culture-related role and training profiles in line with the common competency project run by Nuclear Skills Alliance
    * further development and delivery of safety culture related training.
    * establishment of culture steering group (project culture forum).
    * post-FID resourcing plan including project culture lead recruitment
36. ONR assessment framework for Sizewell C licensing identified a series of organisational capability topic areas under which we gathered relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements. The question for the OC8 topic stream on safety culture development was as follows.
    * Are the company values known, understood, and being applied?
37. In my opinion, this assessment provides sufficient evidence to conclude that company values are known, understood, and being applied.
    * 1. Conclusion
38. I consider NNB GenCo (SZC)’s safety culture function proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
39. Based upon the overall assessment findings in respect of safety culture development, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a NSL holder. ONR will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
40. There are several future challenges, where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
41. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Intelligent Customer
       1. Scope of Assessment Undertaken
42. The ONR expectations for the assessment are defined in the Task Sheet ONR-EPR-TS-20-008 Revision 1 (Ref. 119). The scope of the assessment covers the following areas:
    * IC policy
    * management arrangements
    * implementation plan
    * governance
    * IC capability and resources
    * IC training
      1. Applicable Relevant Good Practice
43. The key RGP in support of the assessment, includes but is not limited to the following:
    * TAG NS-TAST-GD-049 Rev 7: Licensee use of Contractors and Intelligent Customer Capability;
    * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020 (leadership and management for safety- MS.2 - The organisation should have the capability to secure and maintain the safety of its undertakings); and
    * Licensing Nuclear Installations November 2021.
      1. Assessment Process and Outcomes
         1. Regulatory interaction
44. This topic stream Intelligent Customer (OC2) held a number of Level 4 engagements since the start of the licensing process. Overall, nine Level 4 meetings were held, the associated contact records are listed below (Refs. 8 and 9):
    * 29 April 2020 ONR-NR-CR-20-066
    * 31 July 2020 ONR-NR-CR-20-347
    * 15 September 2020 ONR-NR-CR-20-479
    * 21 October 2020 ONR-NR-CR-20-586
    * 10 December 2020 ONR-NR-CR-20-774
    * 5 February 2021 ONR-NR-CR-20-931
    * 24 May 2021 ONR-NR-CR-21-111
    * 20 September 2021 ONR-NR-CR-21-327
    * 16 December 2021 – SZC minutes
45. We carried out I-OC1 intervention on intelligent customer arrangements on 31 January and 1 February 2022 and technical colleagues carried out I-OC2 intervention on 3 February. The contact record captures both interventions ONR-NR-CR-21-583 (Ref. 119).
    * + 1. Evidence provided
46. The documents relevant for this assessment are detailed in the contact record (Ref. 119).
    * + 1. Intelligent customer policy
47. We sought confidence that NNB GenCo (SZC) has an IC Policy.
48. An IC policy v2.0 (Ref. 120) is in place with the Safety, Licensing and Assurance Director assigned as policy owner. The eight standards within the policy are, as expected, closely aligned to the seven principles set out in ONR’s TAG NS-TAST-GD-049: Licensee use of Contractors and Intelligent Customer Capability.
49. However, in line with the IC Policy there is a need for clearer accountabilities between the policy owner and the senior lead, the Technical Programme Director. It was also noted that there were some minor issues with document version control which need to be addressed. The need for setting out clearer accountabilities is included in the FAP.
    * + 1. Intelligent customer management arrangements
50. We sought to understand that there are suitable and sufficient management arrangements to underpin the IC policy and that they include adequate monitoring arrangements. There should also be a process to carry out a health check of the implementation of IC such as self-assessment.
51. The IC policy is underpinned by the IC route map and guidance document (Ref. 121) which sets out how the eight policy standards are addressed by the project and links them to the relevant procedures.
52. The IC route map and guidance document was due for review in September 2021. The intention is to undertake a short-term review of this document and then carry out a more fundamental review working with NNB GenCo (HPC).
53. There are 20 IC-related procedures on the IMS system (Ref. 122). Of these, six are to be issued or approved. There is an IMS adoption plan in place which indicates that these should all be in place by June 2022. Work is also being done to further develop the arrangements on the IMS and link the procedures to ten key attributes which will then provide clearer visibility of the applicable IC sections within particular procedures. This is an action being tracked in the FAP and IMS adoption plan. Procedural updates should then be incorporated into the IC training material.
54. ONR concluded that there were suitable and sufficient management arrangements in the IMS to underpin the IC policy for the work currently being undertaken. The self-assessment raised an AFI which is an action in the FAP (Ref. 123) for the further development of the arrangements on the IMS. Monitoring arrangements were not assessed and will be part of continued regulatory engagement.
    * + 1. Self-assessment
55. A planned IC self-assessment was carried out to assess the early-stage implementation of IC. It involved a desktop review of each policy standard against ONR’s expectations, and eight interviews with staff. A draft report is to be shared once approved but details of the 13 AFIs were shared and have been added to the FAP. Key observations/actions include the following:
    * A lack of clear criteria for IC resource levels for each function (AF1);
    * The need to define a set of principles for IC covering all major alliances and the RD/DI (AF2); and
    * The relationship to the TSO.
56. We agreed with the self-assessment findings and captured the need for criteria to define the allocation of the intelligent customer practitioner (ICP) role on the nuclear baseline (Self-Assessment finding - AFI1 and the need to define a set of IC Principles to be adopted by the Alliances etc (Self-Assessment finding AFI2) as part of a new Level 3 regulatory issue 10607, which is covered later in this section.
    * + 1. Intelligent customer implementation plan
57. We sought to determine that NNB GenCo (SZC) has an implementation plan which sets out how the IC policy will be implemented for the different stages of the project and that it has clear ownership, is being actively monitored, and any learning e.g. from long lead items is incorporated.
58. The IC implementation plan (created as part of the response to Level 4 RI 8582) sets out how the IC policy is to be implemented. It was approved by the GenCo Board in July 2021. The outstanding actions from the implementation plan have now been incorporated into the FAP This is now owned by the IC oversight group, and it was evident at the observed meeting on 18 January 2022 that adequate progress is being made in its implementation.
    * + 1. Governance
59. We sought to understand that there are suitable governance arrangements in place to allow senior management to gain assurance that the organisation has a suitable core safety and IC capability and that it will be effective and robust in ensuring the safe performance of contractors. It will also provide assurance to the GenCo Board that the organisation has a suitable IC capability.
60. NNB GenCo (SZC) have set up the intelligent customer oversight group (ICOG) to provide IC governance and oversight on the project. Its ToR have been approved and shared (Ref. 124). NNB GenCo (SZC) also attends NNB GenCo (HPC)’s IC forum to share any learning. We believe that the setting up of the ICOG is a positive step, but further clarity is needed on its purpose i.e., whether it is purely providing an oversight function or also providing strategic IC direction to the project.
61. The IC policy requires that the IC policy owner provides ‘periodic advice to the GenCo Board.’ During the intervention, two examples were provided where the GenCo Board have been made aware of IC challenges, involving seismic and security issues. However, we would seek a more systemised approach to providing assurance around IC capability to the GenCo Board.
62. We also noted that alignment between the company manual and IC policy is needed, as the manual does not include IC responsibility for the Safety, Licensing and Assurance Director, which is set out in the IC policy. This is to be addressed in the revision of the company manual due in June 2022, to re-align it with the format of the safety management prospectus.
63. ONR was not able to observe the NNB GenCo (HPC) IC forum due to the timeframe of the assessment; this will form part of future regulatory engagement.
    * + 1. Observation of an intelligent customer oversight group
64. We observed the first ICOG on 18 January 2022 and an inspector note (Ref. 125) sets out the key observations, agenda, slides, and IC implementation plan. The ToR had already been approved. Verbal feedback was provided after the meeting. We summarised that clarity is needed on the IC policy owner and IC lead accountabilities. We noted that it was an initial meeting but going forward it needs to be more strategic with links to the NNB GenCo (HPC) IC forum and be able to provide assurance to the GenCo Board via KPIs.
    * + 1. Intelligent customer capability and resources
65. We sought to gain assurance that NNB GenCo (SZC) has sufficient competent (SQEP) IC resource allocated to the right areas, to be able to specify, oversee and accept products or services undertaken by contractors on the licensee’s behalf, and that personnel carrying out an IC role are aware of their accountabilities and responsibilities and that roles with IC responsibilities are identified on the nuclear baseline.
66. NNB GenCo (SZC) should develop a core safety capability to manage the totality of its activities as a licensee, which includes sufficient resource to act as an intelligent customer for the services provided by the RD. Therefore, the design authority topic stream has looked at its IC capability to review the RD’s work.
67. NNB GenCo (SZC) is carrying out IC workshops to better understand the IC capability across the project. To date three have been held, in the technical, safety and civils programmes and two more are planned for CI/BOP/MEH and the NI programme. The agenda and minutes have been shared and initial feedback provided.
68. These workshops have provided insight into those areas requiring IC development and a final report is to be produced and shared. An example provided was the need for a set of ‘IC principles’ to be drafted in establishing the civils works alliance and other major contracts (including the RD and DI). The principles would require a two phased approach to implementation: the first phase drafting the IC principles and the second phase engagement with stakeholders and implementation of the principles. Contract documents should clearly state NNB GenCo (SZC)’s IC expectations. An example was provided of the pre-FID IC arrangements for the RD contract, which is a letter of agreement under which annual task orders are issued for specified services. Arrangements for the pre-FID contract management of delivery included a contract management and communication requirements document. However, this document could not be provided as evidence that IC requirements were clearly stipulated within it. The set of drafted IC principles should be incorporated into the arrangements once implemented ahead of contracts being placed.
69. The nuclear baseline v2.0 was submitted to ONR in November 2021. It sets out the IC resource requirements for the project. This nuclear baseline submission has been assessed against relevant good practice. There was found to be an adequate range of Level 3 IC practitioner roles (RTP 29) allocated on the nuclear baseline for the activities being undertaken at this phase of the project and up to December 2022, however, the assignment of RTP 29 is inconsistently being applied and it was agreed that a set of criteria for its allocation is required. This was an action in the Level 3 RI 10607 which has subsequently been closed.
70. Interviews were held with the three Programme Directors and inconsistencies in the process for allocation of ICP resource was evident. For example, in the NI Programme, all Senior Programme Managers on the nuclear baseline were assigned the ICP role, and the intention is that by project FID all Project Managers will also have the ICP role. The decision being based on risk and phase of the project. The CI/BOP programme based their decision on the current and projected work, complexity, risk, and safety significance. Within the civils programme there was greater reliance on support provided by the TSO, some had previous IC experience brought from other projects and some had not attended the ICP training.
71. There are currently approximately 160 nuclear baseline roles within NNB GenCo (SZC). All of these roles require a minimum IC level 2 competency which is embedded within technical role profiles. The level 2 training is an hour online course.
72. Role training profile (RTP) 29 is for the IC practitioner role, level 3 competency, and defines the competency requirements (Ref. 126). The nuclear baseline submission states that there are 36 posts on the nuclear baseline which hold RTP 29. With the projection that 51 posts will be allocated the role by December 2022.
73. RTP 29 was adopted from HPC after being reviewed by a subject matter expert and no further revisions were seen as required. However, we advised that a further review is undertaken to ensure that, for example, it correctly references guidance for ‘on the job’ reading.
74. RTP 130 nuclear license GenCo Board member is the role assigned to GenCo Board members, which is currently under review and due to be approved. The existing RTP 130 adopted from NNB GenCo (HPC) only required IC level 2 and so it was recommended to upgrade this to level 3. Therefore, there will be IC practitioner level 3 training tailored specifically to GenCo Board member activities. A commitment was given by the IC senior lead that at the 28 February GenCo Board meeting, a one-off session will be undertaken on IC for board members. New GenCo Board members will have to complete RTP130, and the IC level 3 training will be covered by the IC senior lead on a one-to-one basis going forward. ONR acknowledged that it was a positive step that NNB GenCo (SZC) are to provide specific ICP Level 3 training for GenCo Board members and that there is a need to raise and maintain the profile of IC within the GenCo Board. RTP130 is being managed in the organisational development workstream, which is supported by the IC workstream. The updated RTP is now in final draft status undergoing final sign-off. SZC are in the process of producing the briefing materials for the IC training element with a trial roll-out in early June. This is included in the FAP for the organisational development workstream.
75. Six interviews were carried out with a range of staff including embedded contractors, direct employees, those new to role, those assigned the ICP role on the nuclear baseline, and who interface with the supply chain. We found that generally there was good awareness and understanding of what it means to be an IC and their responsibilities when undertaking the ICP role. The TSO staff interviewed were not entirely clear on lines of accountability i.e., that TSO are providing advice to NNB GenCo (SZC)’s Technical Director and Programme Leads, for them to then make decisions.
76. We agreed that a Level 3 RI would be raised which would include the two further actions identified during the intervention: the need for NNB GenCo (SZC) to review TSO resources required to deliver SZC IC on the nuclear baseline and reflect these changes via the MoC process; and produce a FAP for intelligent customer capability and resources to adequately reflect the improvements needed against project milestones.
    * + 1. Intelligent customer training
77. We sought confidence that there is adequate training capability to deliver the required levels of training and that the training is suitable for all IC roles on the project.
78. IC training is provided by NNB GenCo (HPC) and feedback during interviews was that it provides a good grounding in understanding the purpose of IC.
79. A training spreadsheet summarising the status of level 2/level 3 IC training was submitted as part of the evidence pack (Ref. 127) and showed that 19 of the 35 posts allocated the ICP role were competent. However, during the interviews it was evident that there were discrepancies with the data, with staff evidently having attended the level 3 ICP course who were recorded as not attended, being able to describe the course content. The spreadsheet also showed a number of ‘new to post’ staff where it was not clarified whether ICP level 3 was required or not or whether they had done the level 2 training. Five of the posts were past their six-month grace period for undertaking the training. No further submission has been provided and data validation is now part of a Level 4 regulatory issue 10650 for topic stream; training, SQEP and appointments. Confirmation is needed that those performing IC roles are competent to do so. During the I-OC2 which was undertaken by technical colleagues there was no evidence to suggest otherwise. Post the intervention it was confirmed that the data discrepancy at the intervention was due to some records not showing up in SAP that were present in HPC track (e.g. a member of staff had completed the training and it showed in HPC track, but not in SAP). Training is in the process of doing a full check of the data and the latest status of ICP training has been requested. This issue will be solved mid-year when the whole of EDF in the UK moves to My Learning Hub as the single tool.
80. We observed a three-day Intelligent Customer Practitioner level training course in March 2021 to gain assurance that training is delivering the right outcomes. A contact record was produced (Ref. 128). The course had a mixture of both new and experienced delegates, from NNB GenCo (HPC), NNB GenCo (SZC) and the TSO with 12 out of an expected 14 attending. It was conducted in an open and transparent manner and questions were raised throughout the day. It was an opportunity to share experiences, but some delegates fed back that further information would have been helpful on the various IC interfaces; for example, the MEH Alliance and the TCO. References to documents were NNB GenCo (HPC) specific and it was not evident if refresher training would be available following completion of the course.
81. It was noted that some key positions in the organisation that we would have expected to have undertaken the IC training, had not done either the level 2 or level 3 training i.e. the Civil Works Programme Director and the IC policy owner. However, a sample training record was reviewed for the CI/BOP Programme Director, who instead had previous IC training, which showed appropriate sign-off by the Engineering Delivery Director.
82. Training courses are being made available, the next one was the 2 February 2022; however they are not being fully attended. We were informed that there is sufficient training capability available for the projected numbers.
83. Overall, we were content but there needs to be clearer accountabilities around IC training and consideration of refresher training and a specific SZC ICP level 3 course. IC training currently provides a foundation but there should be a framework to build upon IC experience, to support implementation of the IC arrangements post training and to drive the right behaviours. The IC oversight group should play a key part in driving this forward.
    * 1. Comparison with Standards, Guidance and Relevant Good Practice
84. Intelligent Customer is defined within the SAPs as ‘the capability of an organisation to understand where and when work is needed; specify what needs to be done; understand and set suitable standards; supervise and control the work; and review, evaluate and accept the work carried out on its behalf.’
85. In my judgement, at this stage of the project NNB GenCo’s (SZC) activities, as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, SAPs, and TAGs.
    * 1. Status of Regulatory Issues
86. There are no outstanding regulatory issues in the assessed areas.
    * + 1. Level 4 RI 8582- closed
87. A Level 4 RI 8582 was raised following Level 4 interactions between ONR and NNB GenCo (SZC), where we identified four shortfalls for closure by 15 May 2021:
    * Clearly defined implementation plan for the IC policy for all the standards, covering the full scope of IC on the SZC project;
    * Demonstrating how relevant IC learning is being collected and addressed in the SZC approach, including learning from the long lead item procurement;
    * Clear map of how IC requirements are embedded within the overall management arrangements and KPIs in-place to measure effectiveness; and
    * Adequate IC capability plans, which is set out in the pre-FID nuclear baseline, leading up to NSL grant.
88. SZC provided five actions to address the identified four shortfalls. Two of the five actions were closed and the date for compliance for the remaining three was extended. It was agreed that the remaining three actions be reviewed for closure during the IOC1 intervention. The outstanding actions were reviewed and their evidence for closure is provided in the contact record (Ref. 119).
    * + 1. Level 3 RI 10607- closed
89. Four shortfalls were identified following the IOC1 intervention which were captured in a Level 3 RI 10607 for closure by 18 March 2022.

NNB GenCo (SZC):

* + Does not have an approved set of ‘Intelligent Customer principles’ as part of establishing the Civils Works Alliance and procuring other major contracts, including the RD and Direction Industrielle (DI);
  + Does not have ‘Intelligent Customer criteria’ for the allocation of Intelligent Customer Practitioner roles (level 3) to nuclear baseline posts;
  + FAP for its intelligent customer capability does not adequately reflect improvements needed against current project timescales; and
  + Was not able to demonstrate that the nuclear baseline fully reflects the resources that are undertaking work which could potentially affect nuclear safety.

1. The evidence for closure was submitted (Ref. 129) and endorsed for closure by the regulatory issue review meeting on 21 March 2022.
   * 1. Summary
2. We expect the license applicant to establish effective arrangements to be able to demonstrate it has a functional intelligent customer capability, i.e. that NNB GenCo (SZC) has the competence to specify the scope and standard of a required product or service and suitably assess whether the supplied product or service meets the specified requirements.
3. NNB GenCo (SZC) provided evidence against ONR expectations for this topic stream. In particular, the IC policy, underpinned by a set of management arrangements, and the self-assessment of those arrangements. The IC capability has been set out in the nuclear baseline submission of November 2021, underpinned by a vulnerability assessment. The IC Oversight Group has been set up with an agreed ToR to provide the required governance and oversight and IC training is being provided.
4. In addition, a series of intelligent customer topic areas were identified in Appendix 2 of the NNB GenCo (SZC) assessment framework (Ref. 6) under which inspectors would gather relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements.
5. Any significant organisational capability issues identified during the course of topic leads’ assessments would be fed back directly to the relevant organisational capability topic lead. This information would be used to shape ongoing regulatory work and inform the final assessment reports, both within the technical and organisational capability areas.
6. Appendix 2 of the NNB GenCo (SZC) assessment framework Rev 3 asked the following questions regarding intelligent customer:
   * Is there evidence that NNB GenCo is acting as an IC for the work it commissions?
   * Is IC capability adequate and do you consider NNB GenCo competent to fulfil the role?
7. Evidence was provided that NNB GenCo (SZC) is acting as an IC for work it commissions, an example of this is in section 4.6.3.6 of this report, which states that following the long lead item procurement we assessed that NNB GenCo (SZC) has implemented an intelligent customer function and has received advice (and undertaken improvements) that will enable them to exercise their intelligent customer function. However, there have been examples of work being done in specific technical areas by the TSO which did not have the required level of IC oversight. This was raised as a Level 3 regulatory issue 10607, which has now been closed with evidence provided via three organisation change forms requiring the TSO staff to be added to the NNB GenCo (SZC) nuclear baseline.
8. The IC capability on the project has been assessed as part of the intervention I-OC1. All nuclear baseline role holders have level 2 IC embedded in their technical roles which requires a specific training course to be completed. The level 3 ICP role has a specific role training profile (RTP 29) which is assigned to certain posts on the nuclear baseline. The process for allocation of RTP 29 to posts was not clear and therefore the Level 3 regulatory issue 10607 included the need for criteria for allocating the ICP role to posts. This has now been provided as part of the evidence for closure of the Level 3 RI 9031 and now requires communication to the programmes and heads of functions.
9. A training spreadsheet summarising the status of level 2 and level 3 IC training was submitted as part of the evidence pack for the I-OC1 intervention and showed that 19 of the 35 posts allocated the ICP 29 role were competent. However, during the interviews it was evident the data was not credible. The nuclear baseline competency data needs to be validated for all role holders. This is part of a Level 4 regulatory issue 9031 (downgraded from a Level 3) for the training, SQEP and appointments topic stream. The data is to be validated, which is set out in the commitment letter.
   * 1. Conclusion
10. I consider NNB GenCo (SZC)’s intelligent customer arrangements are proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
11. Based upon the overall assessment findings in respect of intelligent customer, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the forward action plans and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
12. There are several future challenges, where we will be seeking further confidence in NNB GenCo’s (SZC) activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
13. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Design Authority
       1. Scope of Assessment Undertaken
14. The ONR expectations for the assessment are defined in a combined Task Sheet for SC1 and OC1 (Ref. 130) The scope of the assessment covers the following areas:
    * the effectiveness of the TCO in supporting the design authority
    * resourcing – including the overlap with HPC
    * interfaces between TCO/DA and TCO to other support areas
      1. Applicable Relevant Good Practice
15. The key RGP in support of the assessment, includes but is not limited to:
    * NS-TAST-GD-079 (Rev 6) - Licensee Design Authority Capability
      1. Assessment Process and Outcomes
16. ONR’s TAG 079 (Table 2) poses a number of questions to aid inspectors in assessing a prospective licensee’s design authority arrangements. These questions have therefore been used as a basis for this assessment and form the main sections within this part of the report.
    * + 1. Regulatory interaction
17. This topic stream Design Authority (OC1) held a number of Level 4 engagements. Overall, three Level 4 meetings were held, the associated contact records are listed below (Refs. 8 and 9):
    * 22 October 2020
    * 4 May 2021
    * 5 October 2021
18. We carried out I-OC1 intervention on intelligent customer arrangements on 31 January 2022 and 1 February 2022 and technical colleagues carried out I-OC2 intervention on 3 February. The contact record (Ref. 119) captures both interventions.
19. We also carried out I-OC6 intervention on Training, SQEP and appointments on 3 February 2022, also followed by individual topic-based sessions. The contact record captures all the sessions (Ref. 54). This followed on from the I-OC5 intervention (Ref. 53) that was undertaken by inspectors within the organisational topic area.
    * + 1. Evidence provided
20. The following interactions took place as part of the assessment. In some cases, these were undertaken alongside other topic areas due to their cross-cutting nature:
    * I-OC6 Intervention, March 2022 (Ref .54)
    * I-OC2 intervention (Ref. 119)
    * LC14 Intervention, November 2021 (Ref. 131)
    * LC20 Intervention, November 2021 (Ref. 132)
      + 1. TAG 079 responses

##### The Design Authority Should Be a Defined Function Within a Licensee’s Organisation Which Is Independent of Operations and Has a Clearly Defined Reporting Line to The Board of The Licensee Organisation

1. The organisational structure of the SZC design authority mirrors that of the HPC design authority, reporting to a Technical Director. This structure is therefore well established within HPC. Due mainly to replication, the allocated resources within SZC design authority are not at the level seen on HPC or other prospective licensees, however, there is a proposed ramp up of resource through to 2024, in line with work activities.
2. The design authority is identified as a dedicated function on the SZC baseline update produced in October 2021. Much of the substantiation is based on a proven-in-use organisation from HPC. The nuclear baseline has been assessed as part of the section of this report related to organisational development and is therefore not covered again in this section.
3. Although there is no current SZC operations/ pre-operations organisation, as with the HPC model, there will be no reporting via any future operations structure. The design authority reports to the SZC Technical Programme Director, who has access to the GenCo Board through the Engineering and Delivery Director. They also have a direct line to the TSO Managing Director, in order to have suitable influence within TCO.
4. All staff within the technical programme, including the design authority, are on the SZC nuclear baseline and have allocated roles, with competency requirements. NNB GenCo (SZC) have stated that all are currently assessed as competent or in development (where appropriate) and all have a minimum of IC level 2 competency through the design authority generic role. However, through ONR interactions there have been found to be a number of gaps within this process. This is discussed in the intelligent customer section in this report and a number of recommendations raised.

##### The Design Authority Should Have the Authority and The Responsibility to Approve or Reject Proposed Design Changes and Concessions

1. This requirement is related to LC20 which has been the subject of a dedicated intervention (Ref. 132). There were no significant gaps found during the intervention.
2. Generally, the LC20 process requires the design authority to issue a formal acceptance of any category 1 or 2 design changes (category 1 also requests NSC advice). There is also retrospective sampling of category 3 and 4. Without this approval, the Engineering and Delivery Director cannot implement a category 1 or 2 design change.
3. Category 1 and 2 design changes require a licence summary statement to be produced by the design authority competent person for that area of plant and reviewed by wider stakeholders. This includes a section on the safety case impact of the change.

##### The Design Authority Should Have the Resources, Capability and Management Processes to Assess Changes to The Plant’s Conditions and Limits and Performance Characteristics, And Have the Authority to Recommend Modification to Or Suspension of Operations

1. As discussed in other sections within this report, the design authority now sits within the TCO. Also under this arrangement is a support organisation, the TSO.
2. NNB GenCo (SZC) has stated that in terms of the design, the arrangements ensure the design authority’s knowledge of a plant’s operating regime and performance characteristics remains current and this is undertaken through the design authority intelligent customer role. Future arrangements will need to be developed when the plant is commissioned and operated. Learning will come from HPC, and that all safety case and design documentation is available on Teamcenter. Cross-fertilisation of knowledge is aided by the TCO and development of individuals within TCO.
3. 553. This aspect of the design authority was included in the IOC-1 (Ref. 9), IOC-2 (Ref. 119), IOC-5 (Ref. 54), and IOC-6 (Ref. 53) interventions that have taken place. The findings of these interventions have shown that there is improvement needed in terms of how NNB GenCo manage their resources and capability to ensure they can effectively undertake their role as an intelligent customer.
4. In terms of the process to assess changes to the plant’s conditions and limits of performance this is related to the LC20 arrangements and covered within the other requirements outlined within this report.

##### The Design Authority Should Have Appropriate Up to Date Knowledge, Skills, Experience and Resources

1. NNB GenCo (SZC) has stated that the size and competency of the design authority is captured in the nuclear baseline and the competency framework. Data and reporting will come through an NNB GenCo (SZC) tool called PowerBI. Furthermore, the current plan is to replicate the HPC structure and size (by 2024). Resources and finance are reviewed, at least twice a year, through the company people and finance planning processes. This is also linked into processes for planning and managing the delivery of safety reports (LC14 process).
2. NNB GenCo (SZC)’s ability to have the appropriate knowledge, skills, experience, and resources was the focus of the IOC-5 and IOC-6 interventions. The conclusions are captured within the contact records (Refs. 9 and 10) which found that there are currently gaps in both NNB GenCo (SZC)’s and ONR’s expectations related to the management, training, and assessment of staff SQEP. This is being addressed within the forward work plan and is being followed up by ONR through the organisational topic stream.
3. During the individual topic stream interventions that were part of IOC-6, ONR interviewed a number of key members of staff to ascertain their level of competence and ability to deliver work related to nuclear safety. In all cases it was found that there were no concerns with the staff undertaking this work on SZC. This is likely to be because the teams are currently small and therefore it is relatively easy for the topic leads to oversee and manage the staff and their output. However, should a site licence be granted, the team would be expected to grow, and the procedures and processes (mentioned above) will require further development.

##### The Design Authority Should Regularly Assess and Determine the Continued Adequacy of The Plant’s Design and Safety Case and Have the Authority and Responsibility to Respond to The Issues Identified

1. NNB GenCo (SZC) has stated that, in order to ensure that the design authority acts from a basis of the best available information, it will only use information that is held on Teamcenter, and in accordance with the IMS. Both are controlled systems that capture the most up to date versions of documents. The project also has configuration management arrangements of the IMS and an LDA (list of documents applicable) that captures the design status and all relevant codes and referentials. Contracts can only be placed in accordance with the defined process. Chief Engineers are also part of this process, who advise on codes and standards.
2. The process that enables the design authority to continually assess the adequacy of the plant’s design and safety case occurs via the LC14 process to produce safety reports, the review and acceptance (R&A) process to accept the design from the RD and the LC20 process for design change. The effectiveness of this process is captured in the organisational learning tool (Insight).
3. The ability to access plant drawings, specifications etc, and ensuring they are up to date and reflect the current status of the plant is delivered through a mixture of the document management tool (Teamcenter) and the configuration management processes (PRO-000033 and PRO-000004).
4. The organisational learning tool and the org learning team do also enter external operational experience (OPEX) gained from industry links. Design authority staff provide OPEX obtained through external meetings, committees, etc. This enables NNB GenCo to receive and act on learning and experience from inside and outside the nuclear industry.
5. The delivery of the safety case through the lifecycle of the project and specifically the PCSR is being assessed within the SC1 topic stream.

##### Where The Design Authority Does Not Have the Detailed, Specialised Knowledge Required of All the Systems and Components Important to Safety It May Choose to Assign Those Responsibilities To ‘Responsible Designers’ Using the Supply Chain

1. NNB GenCo (SZC [REDACTED] who are therefore acting as the RD. NNB GenCo (SZC) states that all work with the RD follows the SZC processes and captures intelligent customer responsibilities. Work is specified by the SZC design authority and subject to formal R&A.
2. Any deliverables produced by the RD are accepted by project intelligent customers and only SZC design authority can perform a technical intelligent customer role for the project linked to nuclear safety.
3. This arrangement mirrors that in place for HPC which has previously been the subject of regulatory assessment.
   * 1. Comparison with Standards, Guidance and Relevant Good Practice
4. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities as defined and documented, have proportionately developed the essential features of such arrangements which are described in relevant international management systems standards, SAPs, TIGS and TAGS, in particular TAG 079.
   * 1. Status of Regulatory Issues
5. There are no outstanding regulatory issues in the assessed areas.
   * 1. Summary
6. Through both the interactions in Level 4 engagements both within this topic stream, and also within the interventions, evidence has been gathered that has been able to inform ONR’s view on both the current design authority, and also how the design authority intends to grow as the project progresses, and what processes and systems are in place to support this.
7. As can be seen from the responses to each of the expectations within the sections above, in most respects the SZC processes and systems have been replicated from HPC. Furthermore, the TSO which supports the design authority is shared between HPC and SZC and in future potentially SZB. This produces both a benefit in terms of having a pool of resources who can be agile to the peaks and troughs of various projects, but also a challenge in terms of how those resources are deployed and also kept engaged to ensure that they understand the bigger picture.
8. Many of the aspects of the design authority are also covered in the sections of this report related to organisational development and intelligent customer arrangements. In these instances, the topic areas have worked closely together, along with the technical topic areas. To reduce duplication and to ensure focus, those areas have taken the lead in addressing any concerns and directly interacting with NNB GenCo (SZC) on the resolution of these.
   * 1. Conclusion
9. I consider NNB GenCo (SZC)’s design authority is proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
10. However, the conclusions from both the IOC-2 and IOC-6 interventions have found that the current processes and systems are not adequate to facilitate the required growth of the design authority post licencing. This concurs with the findings from the intelligent customer section of this report which has raised a number of recommendations which will be followed up via the FAPs.
11. Within the individual topic areas which have informed the interventions, no current concerns were identified in relation to either the level of resource, or their suitability as being qualified and trained. However, this is more likely to do with the relatively small size of the team rather than the current arrangements.
12. Based upon the overall assessment findings in respect of design authority, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder.
    * 1. Recommendations for the Next Phase
13. There are several future challenges, where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
14. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Supply Chain Management (including Management of Long Lead Items)
       1. Scope of Assessment Undertaken
15. ONR expectations for the assessment of supply chain management are defined in the task sheet ONR-SZC-TS-20-011 (Ref. 133) completed in August 2020, on the assumption that NNB GenCo (SZC) would not procure any long-lead items prior to the FID. In January 2021, NNB GenCo (SZC) informed ONR that it intended to procure high integrity items on its own account. Consequently, the task sheet was reviewed. The outcome was that the scope of assessment remained the same, and ONR interactions on high-integrity long-lead items were conducted in parallel. This section brings together the evidence and conclusions from both activities for the purpose of assessing whether NNB GenCo (SZC) has the organisational capability and capacity to become a nuclear site licence holder.
16. The scope of assessment in the task sheet covered the following interlinked areas:
    * supply chain strategy, incorporating
      + delivery of safety case requirements
      + addressing known weaknesses in HPC’s approach
      + intelligent replication of HPC’s suppliers
      + the incentive scheme for suppliers
    * intelligent customer
    * effective specifications
    * supplier capability
    * operational experience processes
17. The scope of assessment relating to SZC’s procurement of high integrity long-lead items focused on the effectiveness of their hold point process, part of SZC’s intelligent customer capability.
    * 1. Applicable Relevant Good Practice
18. The main RGP in support of the assessment, includes but is not limited to the following:
    * Nuclear Safety TAG NS-TAST-GD-077 Revision 6: Supply Chain Management Arrangements for the Procurement of Nuclear Safety Related Items or Services; and
    * Nuclear Safety TAG NS-TAST-GD-049 Revision 7: Licensee Core Safety and Intelligent Customer Capabilities.
      1. Assessment Process and Outcomes
19. In this section of the report, the evidence, outcome, and assessment for each task sheet topic is presented individually. The section on SZC as intelligent customer also includes information arising from our interactions with SZC on their management of high integrity long-lead items.
20. Meetings were held with SZC following NSL application in June 2020, and from January 2021 in relation to high-integrity long-lead items. Relevant contact records (Refs. 8 & 9) are listed below:
    * ONR-NR-CR-20-503 - Level 4 SZC Supply Chain Management meeting
    * ONR-NR-CR-20-767 - Meeting with SZC concerning “Acquire Goods and Services” arrangements
    * ONR-NR-CR-20-811- Meeting between SZC and ONR on SZC incentives framework
    * ONR-NR-CR-20-832 - L4 SZC Supply Chain Management meeting - 5 January 2021
    * ONR-NR-CR-20-946 - SZC incentives regime in the civils arena, particularly the Australian Government model of Alliancing - 11 February 2021
    * ONR-NR-CR20-948 - SZC "requests for proposals” from suppliers, such as Framatome, GE and Siemens, based on test case work with HPC to design a suitable approach - 11 February 2021
    * ONR-NR-CR-21-293 - Level 4 progress meeting on ONR assessment of supply chain management under workstream OC7 - 2 September 2021
    * ONR-NR-CR-21-357 - I-OC11 Supply Chain Management Arrangements - 12 & 13 October 2021
    * ONR-NR-CR-21-360 - Meeting to discuss readiness to commence long lead item procurement with respect to the current expected timeline for ISO9001 full certification
    * ONR-NR-CR-21-399 - SZC - Level 4 meeting on progress with SZC’s high integrity long lead items procurement - 11 November 2021
    * ONR-NR-CR-21-457 - ONR observation of SZC’s hold point panel for the high integrity long-lead items procurement and feedback to Safety, Licensing and Assurance Director - 29 November & 3 December 2021
    * ONR-NR-CR-21-502 - SZC - Meeting to discuss the SZC RPV upper & lower core shell procurement and hold point management procedure - 6 January 2022
    * ONR-NR-CR-21-565-Level 4 meeting to discuss hold point process learning within the SZC HIC long-lead items project
    * ONR-NR-CR-21-566 Observation of SZC High Integrity long- lead items Hold Point Panel on 15 February 2022
    * ONR-NR-CR-21-579 - SZC - I-OC12 Effective Specifications - 15 - 17 February 2022
21. In overview, for every task sheet topic, SZC provided a position statement about its arrangements that included a list of evidence (mainly documented processes) that supported the position. The first position statement for all the topics was produced in July 2021 (Ref. 134), and an update in December 2021 (Ref. 135). The content of the position statements was discussed at Level 4 meetings between ONR and SZC, with further meetings at that level held to focus on specific topics in more detail. There were two interventions: I-OC11 in October 2021, rated green, focused on supply chain strategy, replicating the supplier base of HPC and operational experience processes. The other, I-OC12, rated amber in February 2022 focussed on effective specifications. Additionally, from January 2021, we met SZC regularly to discuss its procurement of high-integrity long-lead items, which included observation of two hold point panels. The evidence from all these sources informs my judgment against each of the topic areas in the task sheet.
    * + 1. Supply chain strategy: delivery of safety case requirements
22. NNB GenCo (SZC)’s strategy (as set out in their position statement, Ref. 135), is to intelligently replicate HPC’s design and supply chain.
23. In replicating the design, NNB GenCo (SZC) claims that it can deliver safety case requirements whilst benefiting from the experience of the replicated HPC supply chain and the efficiencies and improvements made from unit 1 to unit 2 at HPC and subsequently onto SZC as units 3 and 4. NNB GenCo (SZC) claims cost savings from this and from implementing learning from HPC.
24. During intervention I-OC 11 (Ref. 136), NNB GenCo (SZC)’s procurement and contracting strategy and quality strategy were reviewed. These strategies describe the company’s high-level approach to intelligent replication in relation to supply chain and quality. The documents were found to be clear, logical, internally consistent, and consistent with each other. NNB GenCo (SZC) staff we interviewed were familiar with, and working to, these strategies.
25. In the report for intervention I-OC12 (Ref. 87), we advised that at a strategic level, NNB GenCo (SZC) needs to manage the inherent conflict between replication and the need to learn and implement lessons that benefit safety, which generally require change. For example, NNB GenCo (SZC) needs to be alert to changes to codes and standards since HPC’s contracts were executed and actively question whether such updates should be adopted or not.
26. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has in place a supply chain strategy capable of delivering safety case requirements for their intended design of reactor. We have given NNB GenCo (SZC) regulatory advice that will enable it to meet this standard in the longer term.
    * + 1. Supply chain strategy: addressing known weaknesses in HPC’s approach
27. NNB GenCo (SZC)’s position statement (Ref. 135) says that it has access to all HPC learning via the “Insight” IT system. Insight contains lessons learned reports for both HPC and SZC. Additionally, NNB GenCo (SZC) claims to work collaboratively with NNB GenCo (HPC) through forums and workshops to share lessons.
28. It is important that NNB GenCo (SZC) learns from the issues experienced by NNB (HPC) and incorporates that learning into their approach, notably in manufacturing oversight and management of counterfeit, fraudulent and suspect items (CFSI).
29. During intervention I-OC11 (Ref. 136), we found that NNB GenCo (SZC) is developing a contract with the same manufacturing oversight contractor that works for HPC. [REDACTED] and NNB GenCo (SZC)’s relationship with, and expectations of, DI will be underpinned through a contract called the nuclear services agreement, currently under negotiation. We found that NNB GenCo (SZC) understood the issues that NNB GenCo (HPC) had encountered during manufacturing surveillance and was taking steps to address them during negotiation. NNB GenCo (SZC) was also considering how to enhance CFSI management based on learning from HPC. The Insight tool was in use.
30. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has arrangements in place to learn about, and address, known weaknesses in NNB GenCo (HPC)’s approach and thereby reduce the likelihood of those issues being replicated.
    * + 1. Supply chain strategy: intelligent replication of HPC’s suppliers
31. SZC’s position statement (Ref. 135) sets out how NNB GenCo (SZC) intends to replicate the supplier base of NNB GenCo (HPC), secure migration of supplier capability and manage any occasions when a different supplier may have to be contracted.
32. In summary, sourcing strategies have been developed for key work packages identified in the procurement and contracting strategy. The equipment sourcing strategy describes how a process was established to migrate suppliers and gain their commitment to replicate HPC’s scope for SZC.
33. During intervention I-OC11 (Ref. 136), we found broadly adequate arrangements to replicate the supplier base, migrate capability and manage any occasions when a different supplier would need to be contracted.
34. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has arrangements in place to intelligently replicate NNB GenCo (HPC)’s suppliers and manage any occasions when a different supplier may need to be contracted.
    * + 1. Supply chain strategy: the incentive scheme for suppliers
35. NNB GenCo (SZC)’s position statement (Ref. 135) explains its strategic approach to incentivising suppliers. The key principle is that all suppliers that have major on-site works will earn their profit on performance. NNB GenCo (SZC) claims that this will encourage a ‘best for project’ culture. Off-site equipment and technology contracts will have more traditional incentives and disincentives with shared milestones aligning to NNB GenCo (SZC)’s interests.
36. NNB GenCo (SZC) intends to adopt certain key principles within its incentives scheme. These include that nuclear safety will be the overriding priority together with right-first-time quality. It will promote collaboration and a ‘best for project’ ethos, by aligning the interests of NNB GenCo (SZC) and suppliers.
37. NNB GenCo (SZC) intends to use alliancing for civil engineering work and in the mechanical, electrical, and heating (MEH) arena. They intend to use the Australian model of alliancing (explained in Ref. 137).
38. We held meetings with NNB GenCo (SZC) to explore the proposed incentive scheme in detail. The report of our meeting on 11 February 2021 which focused on the Australian model is at Ref. 138, The report of our meeting on 16 December 2020 which concentrated on incentives is at Ref. 138
39. In both of these meetings, we discussed the outlook and behaviours that the incentives regime and preferred alliancing model would encourage within the supply chain. We advised NNB GenCo (SZC) that the incentives framework needed to encourage correct and explicit safety and quality expectations. Leadership is key, particularly by NNB GenCo (SZC), who sets the benchmark and is the custodian of quality. On the Australian model, we challenged NNB GenCo (SZC) on aspects that it will need to manage, such as the charter of behaviours for alliance participants. We noted that NNB GenCo (SZC) is in touch with NNB GenCo (HPC) to learn lessons from that project, although NNB GenCo (SZC)’s incentives regime will differ from that in use at HPC.
40. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has an incentives regime under development that will encourage suppliers to deliver with quality and nuclear safety actively managed by them to the appropriate standard. In my judgment, it is unlikely that NNB GenCo (SZC)’s incentives regime will encourage suppliers to take actions detrimental to nuclear safety to maximise financial rewards.
    * + 1. Intelligent customer implementation
41. Section 4.6 of this report covers NNB GenCo (SZC)'s core safety and intelligent customer capabilities. The purpose of this sub-section is to report on NNB GenCo (SZC)’s implementation of its intelligent customer function. We saw this function enacted in two areas: in the procurement of high-integrity long-lead items and in the development of contract specifications.
42. NNB GenCo (SZC)’s position statement (Ref. 135) says that contract specifications are written either by the RD (for technical specifications) or NNB GenCo (SZC) (for other contract specifications like the General Quality Assurance Standard (GQAS)). When the specifications are written by the RD, a review and acceptance process supported by TSO provides NNB GenCo (SZC)’s intelligent customer oversight and control of these specifications. NNB GenCo (SZC) also claims that it reviews NNB GenCo (HPC)’s specifications for replicated contracts as an intelligent customer function.
43. Intervention I-OC12 (Ref. 87) found that a review and acceptance process supported by TSO/TCO is in place. However, NNB GenCo (SZC) were not using Teamcenter functionality that allows comments to be associated with the document being reviewed. We advised that this functionality should be enacted.
44. Intervention I-OC12 (Ref. 87) explored how NNB GenCo (SZC) assured themselves that the HPC documentation is a sound foundation for their replicated contracts. We were told that the SZC gateway review process does trigger a check on HPC information and yet, in contradiction, that NNB GenCo (SZC) are not re-checking packs arising from HPC, nor sampling a small number. We advised that NNB GenCo (SZC) should clarify how its arrangements assure, in a proportionate way, the quality of the documentation brought across from HPC.
45. Intervention I-OC12 found that NNB GenCo (SZC) use gateway reviews to quality assure specifications as they are developed. As such, gateway reviews are an intelligent customer function. We sampled two contracts. For one, we found that gateway reviews had been conducted and recorded on Teamcenter. For the other (the nuclear services agreement) we were shown a gateway review passport document which was not on Teamcenter, so its provenance could not be verified. There was no plan for the totality of gateway reviews across the portfolio of contracts as required by the conduct project gateway readiness review procedure. Consequently, we raised a regulatory issue at Level 4 (number 10656) which asked NNB GenCo (SZC) to undertake a gateway review on the current nuclear services agreement contract, analyse other contracts to ascertain whether gateway reviews had been applied properly and develop a plan for future gateway reviews across the portfolio. NNB GenCo (SZC) completed these actions satisfactorily by April 2022 and ONR closed the regulatory issue.
46. In January 2021, NNB GenCo (SZC) informed us that it intended to procure certain high-integrity components as “long-lead items” prior to becoming licenced. NNB GenCo (SZC) has a hold point process to manage this procurement which involves hold point panels held periodically. We observed a panel meeting in November 2021 and its performance fell short of expectations (Ref. 139). We raised regulatory issue 10575 asking NNB GenCo (SZC) to implement improvements prior to the next meeting. We observed the panel in February 2022 and performance had improved sufficiently for issue 10575 to be closed (Ref. 140). We advised NNB GenCo (SZC) to sustain this improvement (Ref. 141) which will enable NNB GenCo (SZC) to continue to comply with LC19(1): “Where the licensee proposes to construct or install any new plant which may affect safety the licensee shall make and implement adequate arrangements to control the construction or installation”.
47. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has implemented an intelligent customer function and has undertaken improvements that will enable them to exercise their intelligent customer function in a systematic way over the longer term.
    * + 1. Effective specifications
48. NNB GenCo (SZC)’s position statement (Ref. 135) outlines the system for devising specifications. It relies upon replication of NNB GenCo (HPC)’s contracts to which NNB GenCo (SZC) adds its own needs.
49. Intervention I-OC12 (Ref. 87) examined the specification process as a management system and sampled the quality of specifications produced by the system. It focused on current implementation of the arrangements, verifying whether people and processes were in place and working. It also covered plans to sustain the effectiveness of the system once procurement begins at scale when finance has been secured.
50. We found that most of NNB GenCo (SZC)’s specifications rely upon, and are based upon, those produced for HPC, under NNB GenCo (SZC)’s intelligent replication strategy. SZC specific requirements are added to the HPC foundation, grouped into technical, legal, and commercial packages called “cover notes”. Hence, a SZC specification contains many documents, most sourced from the original HPC contract. So, we advised that, at a strategic level, it is important that NNB GenCo (SZC) secures and maintains easy and enduring access to NNB GenCo (HPC)’s information. This is important to deliver intelligent replication. Our advice was based on the finding that NNB GenCo (SZC) did not have access to certain HPC records.
51. We found that the contracts we sampled specified the latest versions of NNB GenCo (SZC)’s GQAS and LTQRs, and we judged this appropriate. We advised that, at a strategic level, for all replicated contracts, the default for NNB GenCo (SZC) should be to specify the latest version of any applicable code, such as GQAS and LTQR, with arrangements to purposely decide whether to change from the latest version to any earlier version that might have been specified for HPC.
52. The intervention team asked about plans for future implementation to understand the scale of activity as the project progresses. NNB GenCo (SZC) was unable to show us a mobilisation plan related to the contracts required, and when they might be placed, with links to the size and scale of the organisational capability (including training) necessary to deliver them. We advised that NNB GenCo (SZC) needed to draw up a realistic plan.
53. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has implemented arrangements to deliver specifications and has received regulatory advice from us (and is undertaking improvements) that will enable them to deliver effective specifications over the longer term.
    * + 1. Supplier capability
54. NNB GenCo (SZC)’s position statement (Ref. 135) sets out how it will confirm that suppliers have capability prior to placing any contract, how it will migrate supplier capability from NNB GenCo (HPC) as part of intelligent replication, and how NNB GenCo (SZC) will re-assess capability.
55. In summary, NNB GenCo (SZC) claims that its intelligent replication of NNB GenCo (HPC)’s supply chain includes a proportionate validation of supplier qualification and assessment of ongoing supplier performance. NNB GenCo (SZC) claims it has access to HPC information and people so that data is available for review and assessment. NNB GenCo (SZC) says it validates supplier capability itself, taking benefit from NNB GenCo (HPC)’s existing qualification and performance data, and performing its own verification as appropriate.
56. Intervention I-OC11 (Ref. 136) found that NNB GenCo (SZC) has satisfactory management arrangements in place to assure itself that supplier capability is confirmed for migrating suppliers and for any occasions when a different supplier may have to be contracted.
57. For replicated contracts, re-verification is applied by NNB GenCo (SZC) through its tender evaluation. It is set out in the acquire goods and services procedure. In summary, a request for proposal (RFP) is submitted to the supplier, and the supplier’s response is used by NNB GenCo (SZC) to complete a tender evaluation and recommendation form (TE&R). This form includes input from NNB GenCo (HPC) on performance of the supplier in the contract with them. There is also input from the RD who review technical issues in the RFP reply. NNB GenCo (SZC)’s aim is to evaluate the RFP using the TE&R guide and record their thinking and decisions. Additionally, we were shown NNB GenCo (SZC)’s procurement library which is a collection of historical performance data on suppliers informed by interviews with NNB GenCo (HPC) staff.
58. The capability of all suppliers at all tiers is important in delivering quality equipment to the right standard and right first time. NNB GenCo SZC will adopt the NNB GenCo (HPC) approach of cascading capability requirements down the tiers, with responsibility for checking the next tier of sub-contractors placed on the tier above. Hence, Tier 1s oversight of their Tier 2 and Tier 3s is required by SZC’s GQAS, which is part of the contract with Tier 1s. SZC can participate in Tier 1 audits of their supply chain and can directly audit suppliers at any tier. SZC is drawing up supplier maps so that they know the suppliers in the lower Tiers as well as those who are Tier 1.
59. From all of the information reviewed, my assessment is that SZC has arrangements in place to secure and confirm supplier capability.
    * + 1. Operational experience processes
60. NNB GenCo (SZC) describes its OPEX processes in its position statement (Ref. 135). It covers how OPEX from HPC about suppliers is used and the arrangements to secure learning in future from HPC. In summary, NNB GenCo (SZC) has sourcing strategies for each procurement, and these require NNB GenCo (SZC) to consider OPEX information from HPC. NNB GenCo (SZC) has access to the Insight database of lessons learned from HPC. NNB GenCo (SZC) intend to develop supplier relationship management (SRM) arrangements based on those in use at HPC, and these may develop into a “supplier management ecosystem” tool that covers supplier registration, supplier pre-qualification and SRM.
61. During intervention I-OC11 (Ref. 136) we verified that NNB GenCo (SZC) was using the Insight system. We also saw sourcing strategies in use. We verified that NNB GenCo (SZC) has had contacts with NNB GenCo (HPC) to obtain OPEX. These included contacts to develop the procurement library and to understand improvements in quality management and CFSI arrangements made by NNB GenCo (HPC). NNB GenCo (SZC) and NNB GenCo (HPC) staff have held joint workshops, notably one to discuss learning about manufacturing surveillance in the supply chain.
62. NNB GenCo (SZC) is capturing lessons learnt directly from some key suppliers and has recently met [REDACTED] NNB GenCo (SZC) held workshops with suppliers in late 2019 to early 2020 concerning replication and experiences at HPC. A document was produced which is being kept up to date and enables themes to be collated.
63. Looking to the future, NNB GenCo (SZC) said that the arrangements for sharing information with NNB GenCo (HPC) have not yet been formalised, and these arrangements will be developed under NNB GenCo (SZC’s) transition programme.
64. From all of the information reviewed, my assessment is that NNB GenCo (SZC) has established adequate arrangements to obtain operational experience, particularly from NNB GenCo (HPC).
    * 1. Comparison with Standards, Guidance and Relevant Good Practice
65. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities, as defined and documented have proportionately developed the essential features of such arrangements which are described in international management systems standards, SAPs, TAGs and TIGs.
    * 1. Status of Regulatory Issues
66. Two ONR regulatory issues related to the assessed areas were raised. One, RI10575, on improvements to the hold point panel process, has been closed satisfactorily. The other, RI10656, on improvements to gateway reviews, was closed.
    * 1. Summary
67. Appendix 2 of ONR’s assessment framework (Ref. 6) asks two questions about NNB GenCo (SZC)’s intelligent customer capability. First, whether there is evidence that NNB GenCo (SZC) is acting as an intelligent customer for the work it commissions, and second whether the intelligent customer capability is adequate and (consequently) whether NNB GenCo (SZC) is competent in the role. In my judgment, based on evidence from the procurement of high-integrity long lead items, NNB GenCo (SZC) is acting as an intelligent customer, and has improved its capability in response to lessons learned. Hence, I judge that NNB GenCo (SZC) is currently competent to fulfil the role of intelligent customer for high-integrity long-lead items; although I intend to maintain oversight of this activity to ensure that the capability is sustained.
68. Looking beyond intelligent customer capability, and to a summary of wider supply chain management, the evidence shows that important parts of NNB GenCo (SZC)’s supply chain management arrangements are in place and have been improved where necessary. There is a supply chain strategy based on intelligent replication from NNB GenCo (HPC) that includes arrangements for incentives, checking supplier capability and devising specifications. NNB GenCo (SZC) needs to devise plans in some key areas, such as a mobilisation plan and a plan for gateway reviews.
    * 1. Conclusion
69. I consider NNB GenCo (SZC)’s supply chain management, including management of high-integrity long-lead items, is proportionately developed for the current stage of the SZC project.
70. In my judgment, based upon these overall assessment findings in respect of supply chain management, including long-lead items, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
71. There are several future challenges where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
72. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Organisational Learning
       1. Scope of Assessment Undertaken
73. The ONR expectations for the assessment are defined in the task sheet ONR-EPR-TS-20-008 Revision 1 (Ref. 142).
74. The scope of the assessment covers the following:
    * incident reporting (now covered in the LC7 intervention)
    * organisational learning strategy and management arrangements
    * resources and capability (including training)
    * leadership
    * system for OPEX
      1. Applicable Relevant Good Practice (RGP)
75. The main RGP in support of the assessment, includes but is not limited to the following:
    * Safety Assessment Principles for Nuclear Facilities, 2014 Edition Revision 1 January 2020 Leadership and management for Safety Learning MS.4: Lessons should be learned from internal and external sources to continually improve leadership, organisational capability, the management system, safety decision making and safety performance;
    * Licensing Nuclear Installations, November 2021; and
    * ONR Guide, Notifying and Reporting Incidents and Events to ONR, ONR-OPEX-GD-001 Revision 7.
      1. Assessment Process and Outcomes
         1. Regulatory interactions
76. This topic stream, Incidents and Organisational Learning (OC10) did not develop a regular drumbeat of Level 4 engagements. Overall, three Level 4 meetings were held, the associated contact records are detailed in (Refs. 8 and 9):
    * 19 November 2020 - ONR-NR-CR-20-700\*
    * 23 June 2021 - ONR-NR-CR-21-171 \*
    * 4 November 2021 - ONR-NR-CR-21-391

(\*) held jointly with the safety culture development topic stream OC8

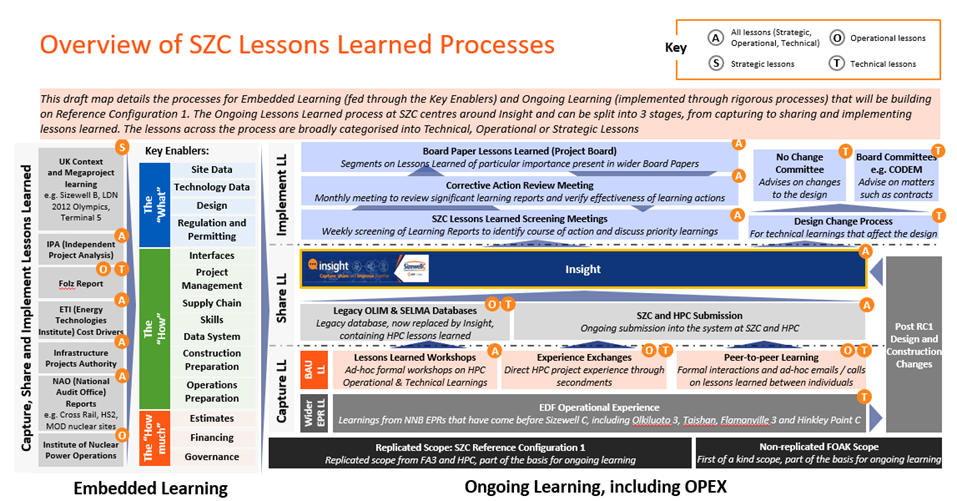
1. At the June 2021 Level 4 meeting we recognised that the delay in setting the strategy and resourcing the topic stream was not in pace with the project and recommended escalation to the Level 3 meeting.
2. The task sheet was used to draft the intervention scope document, I-OC7 Organisational Learning (Ref. 143). This enabled a review of the focus areas. We then carried out intervention I-OC7 on 19-20 January 2022 see contact record ONR-NR-CR-21-543 (Ref. 144).
   * + 1. Evidence provided
3. The documents relevant to the assessment are listed in the contact record (Ref. 144).
   * + 1. Incident reporting
4. This was included in the original task sheet for the assessment. However, it was not part of the intervention scope document as it was covered in a separate LC7 intervention carried out (Ref. 149).
   * + 1. Organisational learning strategy and management arrangements
5. This area focussed on the need for NNB GenCo (SZC) to have an organisational learning (OL) strategy and adequate management arrangements, as well as evidence of learning both internally and externally.
6. We reviewed the draft OL strategy, which is to have an underpinning OL plan, and the OL arrangements, which have been adopted from NNB GenCo (HPC). The need for the OL strategy to be reviewed and approved was part of Level 4 RI 10566. Post the intervention the OL strategy, which also includes the OL FAP as Appendix B, was approved by the PPC (Ref. 105).
   * + 1. Self-assessment
7. The arrangements have been part of a self-assessment. The report (Ref. 146) actions are to be put on the OL system and added to the FAP, in particular AFI 1 to ensure that the Insight tool is included in the list of business systems that shall be managed under retention arrangements.
8. We concluded that the arrangements were not at the level of maturity expected. This is partly owing to the delay in resourcing the Performance Improvement Manager post, and therefore the drafting of the OL strategy. The underpinning plan to deliver the strategy will need to be developed and the OL arrangements will need to be further reviewed following the self-assessment and period of shadow working.
9. The identified shortfalls have been captured in Level 4 Regulatory issue 10566 comprising five actions. The following three actions were closed out post the intervention:
   * Action 1- The OL strategy needs to be reviewed and approved by the GenCo Board;
   * Action 4 - In relation to LC7 requirements, the levels of investigation (priorities) for events need to be included in the appropriate procedure; and
   * Action 5 - Actions from the OL self-assessment needs to be approved. In particular LC6 compliance related AFI1 (i.e., to include Insight to the retention arrangements).
     + 1. Resources and capability
10. This area focussed on the need to have adequate competent defined resources to undertake organisational learning roles and operate the arrangements. Also, that a developed training plan for OL is in place for staff and contractors and additional specialist training where required.
11. There has been some delay in resourcing the OL topic stream. The performance improvement manager was recruited in October 2021 and is now resourcing the team, with the recruitment of an OL lead confirmed after the intervention. Further details were provided on plans to build the OL resources, post the intervention these will need to be further developed and related to the project milestones and future planned activities. The resourcing of the team is essential to be able to deliver the required outputs.
12. Currently there are four role training profiles (RTPs) associated with the learning processes.

Figure 20 – OL Role Training Profiles

|  |  |  |
| --- | --- | --- |
| NNB-303-TPR-000132 | 1.0 | Investigation Specialist |
| NNB-303-TPR-000133 | 1.0 | Organisational Learning Champion |
| NNB-303-TPR-000134 | 3.0 | Organisational Learning Co-ordinator |
| NNB-303-TPR-000118 | 2.0 | Organisational Learning Specialist |

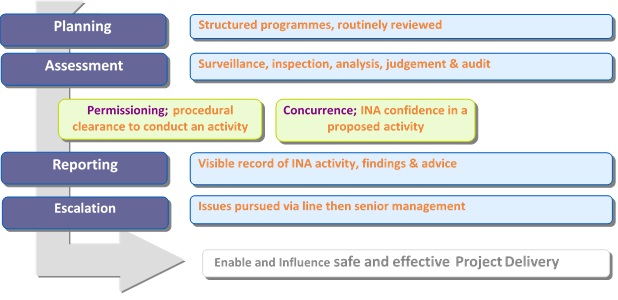
1. The RTPs need a further review before being assigned to posts via the MoC process. OL training requirements are to be set out in a plan for both staff and contractors. This can be done once the four RTPs have been reviewed.
2. These shortfalls were captured in the remaining two actions in Level 4 regulatory issue 10566:
   * Action 2 Resources required for the organisational learning roles are to be identified for current and future planned activities. The four OL RTPs are to be reviewed as part of this process; and
   * Action 3 OL training requirements for the OL roles are to be set out in a plan for both staff and contractors.
3. It was confirmed after the intervention that the four roles had been reviewed and approved by the OL GenCo Board champion. The resources required have been identified from a pool of experienced staff. The organisational learning specialist is a nuclear baseline role and has been assigned to the performance improvement manager. The investigation specialist is a nuclear baseline role and an organisation change form has been submitted and approved. The role has been assigned to four staff, all of whom have experience in P1 investigations. The intention is to get this role moved away from just the safety directorate and into the supply chain/ delivery organisation as it is being established. The organisation learning champion is a non-nuclear baseline role. The current list of champions has been updated. The organisational learning co-ordinator is a nuclear baseline role, and the candidate has just accepted the position and is due to start in May 2022.
4. This enabled action 2 of regulatory issue 10566 to be closed. We therefore concluded that a plan is needed setting out the required resources going forward as the delivery organisation develops. Action 3 of regulatory issue 10566 remains open as the training requirements for the current OL roles needs to be set out. The specialist roles currently assigned have been adopted from HPC and further reviewed. Therefore, the intention is to carry out a gap analysis of the current NNB GenCo (HPC)’s training available and then send staff on the new/ revised course.
   * + 1. Leadership
5. This area focussed on the role of the board champion and their ability to demonstrate how lessons learnt, both internally and externally, continually improve leadership and culture. This includes how learning is captured from NNB GenCo (HPC) and other EPR and mega projects.
6. There is an experienced OL executive sponsor / GenCo Board champion in post, however this needs to be clearly set out within their role description. The governance arrangements are included within the OL strategy with one of the key meetings being the corrective action review group, which will be set up in quarter 2 2022. Examples were provided of how OL is being communicated in the project, which included, via the six OL champions, team briefings and via GenCo Board papers, which include a specific section on learning. The strategic learning from all GenCo Board papers is currently being screened for inputting onto the OL system.

Figure 21 –OL Role Training Profiles



1. We concluded that there is an experienced GenCo Board champion in place and progress has been made. The processes in place were evidently working but in preparation for the organisations transition, channels for capturing learning e.g. from NNB GenCo (HPC) and EDF, will need to be further formalised, as required by paragraph 77 of the SAPs. This will be a focus for future ongoing regulatory engagement and should also include a map of OL data sources for the project.
   * + 1. OPEX system
2. This area focussed on the need for a suitable system to capture, manage and communicate OPEX, including any training requirements, coding aligned with NNB GenCo (HPC), ability to retrieve relevant OPEX for future activities, and system outputs that provide assurance.
3. In 2019 NNB GenCo (HPC) and NNB GenCo (SZC) started looking at a new system to replace the current organisational learning systems: OLIM and the safety & environmental learning management system (SELMA). ‘Insight’, a cloud-based system, was selected and went live on 14 June 2021, with 22,000 OLIM records being transferred from NNB GenCo (HPC). Further releases are planned in March 2022 which will provide greater functionality. Then OLIM and SELMA databases will become obsolete, and their data will be uploaded to Insight. Tier 1 contractors will be contractually required to use Insight.
4. A live demonstration of the system was provided. The dashboard showed high level KPIs e.g. LRs raised per month, open and overdue actions. The intention is that these will be broken down for departments going forward. A sample of random data was reviewed live on the system which included the following:
   * Action 10211 related to LR 22810 and all was found to be in order
   * A search was performed on key words ‘lessons learned licensing’ but this did not provide the report intended. However, we were later informed the particular report had not yet been uploaded to Insight, the search however did list 183 LRs
5. It was noted that no date span could be used in the search criteria and a specific date had to be selected. Feedback on issues with the search function should be provided to the Insight lead to ensure that any necessary improvements can be made.
6. Insight has e-training available as it is a relatively intuitive system. Feedback on current user experience should be captured to enable future refinements. Data outputs can provide the required assurance, albeit currently at a high level. Accessibility of investigation reports also needs to be maintained.
7. We concluded it was positive that ‘Insight’ has been adopted as an organisational learning solution, providing a single simpler system with performance metrics available. Further engagement and communications within NNB GenCo (SZC) should widen the user base.
8. We observed the weekly routine screening meeting on 19 Jan 2022. The routine screening meeting reviews LRs raised within NNB GenCo (SZC), identified in NNB GenCo (HPC) of interest to NNB GenCo (SZC) and identified by external bodies such as WANO, INPO or other relevant external events, to ensure that conditions adverse to quality are reviewed and given visibility at the correct level. The routine screening meeting agrees ownership, classification/categorisation, and priority of LRs. The review will ensure that appropriate resources are assigned, immediate actions carried out and reportability requirements met. The routine screening meeting will also identify potential adverse trends and/or repeat occurrences. Attendees are empowered to make decisions to on behalf of their function and need to agree any significant actions/ investigations in advance if required. Expectations for attendees are set out in Appendix A of the terms of reference.
9. An inspector note was produced (Ref. 146). We concluded that the meeting was well run and provides support to compliance with LC7 and facilitates the organisation learning processes. However, a more standardised format for inputting data onto Insight would ease retrieval at a later date and the submissions should be quality assured. An action was raised for the terms of reference to be approved. This was confirmed after the intervention (Ref. 147).
   * 1. Comparison with Standards, Guidance and Relevant Good Practice
10. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities, as defined and documented, have the essential features of such arrangements which are described in SAPs, TIGs and ONR guidance.
    * 1. Status of Regulatory Issues
11. There is an outstanding Level 4 regulatory issue, 10566. One of the five actions remains open and will be monitored as part of ongoing regulatory engagement. There is currently a small number of staff assigned the OL roles and have been selected based on their level of qualifications and experience. Following the review of the RTPs the intention is to carry out a gap analysis of the current training available and then send assigned staff on the new course. Therefore, this action is focussed on improvements to the current training available.
    * 1. Summary
12. In terms of compliance with the following Licence Conditions the Licensee -
    * LC 7 (1): shall make and implement adequate arrangements for the notification, recording, investigation, and reporting of such incidents occurring on the site.
13. The arrangements for LC7 were assessed in a separate LC7 intervention (Ref. 148), which was rated green and summarised in the LC assessment report.
14. NNB GenCo (SZC) provided evidence against ONR expectations for this topic stream. In particular: approval of the OL strategy and the completion of the self-assessment with the actions included in the FAP. Examples were provided of LRs being raised on Insight e.g. regarding the long lead item hold point.
15. In addition organisational learning topic areas were identified in Appendix 2 of the NNB GenCo (SZC) assessment framework (Ref. 6) under which inspectors would gather relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements.
16. Any significant organisational learning issues identified during the course of topic leads’ assessments would be fed back directly to the relevant organisational capability topic lead. This information would be used to shape ongoing regulatory work and inform the final assessment reports, both within the technical and organisational capability areas.
17. Appendix 2 of the NNB GenCo (SZC) assessment framework asked the following question regarding organisational learning.
    * Is there evidence of relevant learning (from HPC and beyond) being reviewed and applied, where appropriate?
18. NNB GenCo (SZC) has implemented the Insight system for capturing learning which went live on 14 June 2021, with 22,000 OLIM records being transferred from NNB GenCo (HPC). Further releases are planned in March 2022 which will provide greater functionality.
19. We also observed the screening meeting on 19 Jan 2022. NNB GenCo (HPC) LRs were reviewed as well as EDF events, although the items were not currently applicable to activities being undertaken at NNB GenCo (SZC), details of them can be retrieved from the Insight system at a later date if required.
20. The application of learning was also evidenced by the sample of board papers reviewed which require a specific section to capture and consider learning e.g. from NNB GenCo (HPC).
    * 1. Conclusion
21. I consider NNB GenCo (SZC)’s organisational learning function is proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
22. Based upon the overall assessment findings in respect of organisational learning, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the FAP and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
23. There are several future challenges, where we will be seeking further confidence in NNB GenCo (SZC)’s activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAP and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
24. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. Independent Assurance and Advice
       1. Scope of Assessment Undertaken
25. Independent challenge and oversight arrangements are two focus areas for seeking assurance that the licence applicant has suitable and sufficient organisational structures, resources, and competencies to lead and manage safety effectively. These focus areas are listed in section 89 of the ONR document Licensing Nuclear Installations (Table 4).
26. The purpose of the OC6 topic stream on independent assurance and advice was to assess whether NNB GenCo (SZC) has established an independent nuclear safety assurance capability that is sufficiently resourced and capable to provide timely advice, which appropriately influences the organisation.
27. The ONR expectations for the assessment are defined in the Task Sheet ONR-SZC-TS-20-010 (Ref. 103). The scope of the assessment covers the following areas:
    * strategy and forward plan (Methodology area 1)
    * resources / capability (Methodology area 2)
    * adequacy of arrangements (Methodology area 3)
    * self-assessment (benchmark against relevant standard) (Methodology area 4)
    * evidence of effective INA interaction (Methodology area 5)
      1. Applicable Relevant Good Practice
28. The main RGP in support of the assessment, includes but is not limited to the following:
    * Safety Assessment Principles for Nuclear Facilities, Leadership, and management for Safety Learning MS.1-4, 2014 Edition, Revision 1, January 2020. (Table 6).
    * Licensing Nuclear Installations, Revision 6, November 2021. (Table 9).
    * Challenge Culture, Independent Challenge Capability (including an Internal Regulatory function), and the provision of Nuclear Safety Advice, NS-TAST-GD-080, Revision 4. (Table 7).
29. This relevant good practice was used while taking into account the activities being carried out or planned by NNB GenCo (SZC) at this point of the assessment.
    * 1. Assessment Process and Outcomes
         1. Regulatory interaction
30. While the independent nuclear assurance (INA) function was steadily developing in the right direction, the OC6 topic stream was rated amber by ONR since the start of licensing process. We (ONR) held eight Level 4 meetings (Refs. 8 and 9) as follows:
    * ONR-NR-CR-20-465, 14 September 2020
    * ONR-NR-CR-20-559, 14 October 2020
    * ONR-NR-CR-20-667, 16 November 2020
    * ONR-NR-CR-20-885, 4 February 2021
    * ONR-NR-CR-20-1072, 23 March 2021
    * ONR-NR-CR-21-140, 9 June 2021
    * ONR-NR-CR-21-305, 17 September 2021
    * ONR-NR-CR-21-482, 16 December 2021
31. We performed an I-OC9 intervention on independent assurance and advice in January 2022 (ONR-NR-CR-21-519, Ref. 9). This intervention was rated green.
    * + 1. Strategy and forward plan
32. We sought to understand what the strategy and forward plan for the independent assurance and advice function, taking into account learning from existing nuclear new build projects.
33. NNB GenCo (SZC) approved its INA strategy in the form of a project board paper in March 2021 (Ref. 149). This strategy is directly linked to the learning obtained via benchmarking.
34. The INA function is intended to be aligned with the principles taken from the Safety Directors’ Forum’s good practice guide on independent oversight (Table 4), which we consider as relevant good practice.
35. The INA strategy proposes the following model of internal regulation as shown in Figure 22.

Figure 22 – NNB GenCo (SZC) Internal Assurance Model



1. Appendix A of the INA strategy contains the INA mandate, which was later issued as a stand-alone document signed by NNB GenCo (SZC)’s Managing Director (Ref. 150). This mandate gives authority to the members of the INA function to do the following:
   * Select the areas of focus that they deem represent the highest strategic risk, with nuclear safety as an overriding priority, without undue pressure from the individual delivery functions to either include or exclude topics or areas;
   * Go anywhere and examine anything they need to, providing that they operate within the scope of this mandate. In doing so, they will follow relevant company arrangements and will be managed by the sponsor or owner of this mandate;
   * Review documents, attend meetings, carry out inspections, assessments, investigations, audits, and other necessary evaluations to provide assurance;
   * Assure key project activities: including plans, hold-points, and organisational changes;
   * Provide insights and solution-oriented recommendations on overall company performance, nuclear safety leadership, decision-making and culture;
   * Operate within their mandate without fear or favour in an honest, fair, targeted, proportionate, consistent, transparent, and accountable manner;
   * Maintain oversight of the responsible function’s engagement with all external regulators and enhance stakeholder confidence; and
   * Develop into a world-leading internal regulator for nuclear new build.
2. NNB GenCo (SZC) shared the update on its INA strategy that was prepared for the February 2022 project board meeting (Ref. 151). This update recognises the progress made since the INA strategy was approved in terms of development of the INA function and delivery. It also aims to set the scene for more formal interaction between INA and project governance forums, including the GenCo Board, as the project moves into ‘regulatory’ shadow working and post licensing arrangements. It proposes quarterly reporting to the project board (or equivalent) and the GenCo Board starting in Q3 2022, subject to agreement from the GenCo Board. In addition, it contains an update on the INA FAP.
3. NNB GenCo (SZC) shared the plan of INA work for 2021 (Ref. 152). This plan acknowledges that the lead assessors for quality assurance, security, construction security and construction safety are yet to be identified. NNB GenCo (SZC) stated that this plan will be risk-informed and linked to all key activities.
4. Overall, we were satisfied with the content of the strategy and forward plan for the independent assurance and advice function.
   * + 1. Resources and capability
5. Adequate organisational capability for nuclear safety advice and independent challenge is one of core features expected for the licensee organisation (NS-TAST-GD-080, Table 2). This encompasses appropriate organisation, staffing and management of the nuclear safety advice and independent challenge capabilities.
6. NNB GenCo (SZC) provided role and training profiles for all INA related roles. These profiles were adopted from NNB GenCo (HPC). However, they have not been updated for some time. NNB GenCo (SZC) therefore reviewed these documents and produced associated management of change forms. We were satisfied with this approach noting that the common competency project run by the nuclear skills alliance is now reviewing all of these role and training profiles.
7. The proposed INA resourcing for 2022 (subject to funding agreement) is as follows.

Figure 23 – INA Indicative Resourcing

|  |  |  |
| --- | --- | --- |
| **INA Indicative Resourcing in relation to FID** | | |
| INA Site Manager | Recruit FID - 3 months | Support to Site preparation |
| 2 x Site Inspectors | Recruit @ FID + 3/6 months | Support Oversight of Site Operations. Future role will include Operations oversight (INSR). |
| 1 x Independent Technical Assessment Manager | Recruit @ FID – 3 months | Implement SZC INA of ITA activity |
| 3 x Independent Inspectors | Recruit @ FID + 6 months | Performance Improvement - OL, Culture and Training, Quality/Supply Chain, Security. |
| [REDACTED] | [REDACTED] | [REDACTED] |

1. We interviewed all members of the existing INA team. The head of INA was able to clearly articulate the behavioural expectations and expertise required for the INA team, such as an understanding of nuclear safety and its importance, an understanding of nuclear safety culture, the ability to articulate the issues and their own position or ability to interact with people. The head of INA prefers a more engaging approach as opposed to a simple compliance-based approach. In future the head of INA expects their team to be more diverse. The skills needed in the INA team are supply chain, security, and site expertise. The head of INA has a vision for INA to be a resilient organisation with a constant flow of people in and out. We asked about the potential conflict of roles for the head of INA and licensing. It was recognised that there is currently an issue, and the organisation is seeking to find a permanent solution. We were satisfied with this response noting that we would follow this issue up through our regular level 4 engagement.
2. We discussed with the INA manager and other INA assessors their recent work and learning from other nuclear projects. An independent technical assurance (ITA) assessor, who was previously NNB GenCo (HPC)’s ITA manager, shared their ideas for the future ITA strategy. We noted that very good coaching was provided to a less experienced new member of the team. We were satisfied with the competency and leadership demonstrated during these interviews. However, we also noted examples of excessive workload directly related to the licensing schedule.
   * + 1. Adequacy of arrangements
3. An independent challenge capability is one of the core features expected for a licensee organisation (NS-TAST-GD-080, Table 2). This encompasses adequate independent challenge to, and oversight of, nuclear safety leadership, management and decision making at all levels of the organisation, and the establishment of an independent internal regulation function or suitable alternative.
4. NNB GenCo (SZC) provided a suite of arrangements for the INA function. These procedures were adopted from NNB GenCo (HPC), and we considered these to be adequate. However, both NNB GenCo (SZC)’s review and ONR’s review identified that that these procedures were referring to specific NNB GenCo (HPC) roles that had not yet been filled by NNB GenCo (SZC). NNB GenCo (SZC) therefore revised these documents to ensure consistency with its organisational arrangements. We were satisfied with these updated documents. NNB GenCo (SZC) later confirmed that the updated INA procedures are now available on the IMS.
   * + 1. Self-assessment and benchmark
5. We sought confidence that NNB GenCo (SZC)’s independent assurance and advice function can demonstrate the continuous improvement principle by benchmarking and self-assessment against relevant standards.
6. As part of developing the INA function, NNB GenCo (SZC) performed a benchmarking exercise that was used as an input to the INA strategy. The learning was later captured in a stand-alone document (Ref. 153). The following key activities and interactions have contributed to this benchmarking report:
   * Document review and interviews with HPC head of INA and lead team members;
   * Document review and interviews with EDF Nuclear Generation’s INA;
   * Interviews and document exchange with programme and project partners (PPP) assurance lead at Sellafield Ltd;
   * Ongoing mentoring of head of INA from the National Nuclear Laboratory’s (NNL) head of INA;
   * Attendance and participation in the Safety Directors’ Forum independent oversight working group; and
   * Attendance and participation in WANO independent nuclear safety oversight working group.
7. This report also captures high level ‘Safety Directorate’ learning from NNB GenCo (HPC). We were satisfied with this benchmarking exercise. Moreover, it was apparent from regular Level 4 interaction that these lessons learned were used for the development of the INA function.
8. NNB GenCo (SZC) provided an INA self-assessment report (Ref. 154), which was conducted in November and December 2022. This self-assessment covered INA procedures, key documents, and INA performance.
9. This self-assessment was also performed against the Safety Directors’ Forum good practice guide on independent oversight (Table 4).
10. Some independent assessment activities could not be assessed yet due to the stage of the project. Reporting to directors and senior management as well as monitoring and reviewing performance are still predominantly a future intention. However, the overall picture indicates that the INA function is sufficiently developed for the current stage of the SZC project.
11. The INA self-assessment yielded four FAP actions, which will be recorded in the Insight learning tool. A further 22 actions relate to ongoing internal actions supporting INA functional improvements. These are managed through the INA management tool.
12. Notable actions/ areas for further development were identified as follows:
    * formal reporting to the project board
    * nuclear safety policy review
    * INA NSL grant readiness review
    * INA manual to be produced
    * INA team expansion
    * INA organisational note (part of wider Safety Directorate organisational note)
    * training on ‘role of INA’ in SZC induction training
    * WANO independent nuclear safety oversight training for INA personnel
    * measures for INA performance monitoring
13. We noted that the self-assessment has not identified the potential conflict of roles since head of licensing is the same person as the head of INA. This is nevertheless acknowledged in the INA strategy.
14. In our view, this self-assessment was performed thoroughly and can be used as an example of INA’s increasing competence.
15. NNB GenCo (SZC) presented the current state of the INA management tool (Ref. 155), which houses a number of tools to aid delivery of the INA function. This spreadsheet contains an observation tool for structured recording and evaluation of INA observations. This tool was developed using learning from ENGL. We consider this to be a very mature approach given the early stage of the project.
16. Overall, we were satisfied with INA’s benchmarking and self-assessment against relevant standards.
    * + 1. Evidence of effective INA interaction
17. Provision of nuclear safety advice is one of the core features expected for the licensee organisation (NS-TAST-GD-080, Table 2). This encompasses adequate nuclear safety advice which supports effective, proportionate nuclear safety leadership, management and decision making at all levels of the organisation.
18. Another core feature expected for the licensee organisation (NS-TAST-GD-080, Table 2) is a challenge culture, which means a culture whereby receiving advice and challenge are an expected and accepted part of routine business.
19. In line with LC13, the NNB GenCo (SZC) NCS is an advisory and guidance body which will be set up, should a nuclear site licence be granted, to provide nuclear safety advice to the licensee to support its responsibilities for the Sizewell C project. NNB GenCo (SZC) shared the NSC terms of reference (Ref. 156) stating that it is now operating in a shadow working arrangement. We were satisfied with the content of this document. NNB GenCo (SZC)’s NSC is subject to a more detailed LC13 assessment under a specific compliance topic stream (Ref. 158).
20. NNB GenCo (SZC) provided its procedure ‘provide formal advice from assurance’ (Ref. 157) together with accompanying guidance and forms. Advice is defined as the communication of shortfalls in behaviours, culture, compliance, or safety case to the business. Advice issued by INA ranges from level 3 being “normal business”, level 2 being more formal written advice for significant issues and level 1 advice which would be issued in the event of a major safety shortfall. Level 1 and level 2 advice can include an instruction to stop work. We were satisfied with the content of this procedure.
21. NNB GenCo (SZC) provided the examples of INA level 3 advice on turbine disintegration, long lead Items, and seismic design basis earthquake. These examples were further discussed during an interview with the ITA assessor. We were satisfied with these examples. INA has provided examples of its work so far, which included the following topics:
    * assurance concurrence report part A for procurement of SZC nuclear steam supply system long lead items
    * assurance concurrence report part B for the SZC replication hold point
    * no change committee observations (advice)
    * ITA report on pre-construction safety report specification
    * ITA report on justification of site suitability report
    * ITA report on SZC replication ALARP position paper
    * ITA comments on SZC nuclear baseline
    * fortnightly INA brief examples
22. Most of these examples were discussed in Level 4 meetings. Some hold point meetings were directly observed by ONR, e.g., NNB GenCo (SZC)’s hold point panel for the high integrity long-lead items procurement (ONR-NR-CR-21-457, Ref. 9). We noted that the maturity of INA’s output is gradually increasing.
23. We interviewed the SZC organisational capability manager, nuclear island project manager and nuclear island Engineering & Delivery Programme Director on their experience with INA interaction (i.e., nuclear baseline statement and long-lead items concurrence). Overall, their feedback from INA interaction was positive with specific examples provided. INA’s contribution was seen as effective and adding value. However, there still seems to be room for improvement in terms of efficiency (e.g., a clear understanding of the expectations) and visibility as INA seems to be less understood by those from the SZC project who do not regularly interact with INA.

##### Nuclear Site Licence Concurrence

1. INA described its intention to conduct a concurrence on licensing readiness which encompasses oversight of workstreams, review of FAPs and review of the readiness review document. The INA concurrence will be presented alongside the readiness review document at the licensing and permitting oversight group, NSC and the GenCo Board.
   * 1. Comparison with Standards, Guidance and Relevant Good Practice
2. ONR’s SAPs for nuclear facilities (table 4) contain four high level inter-related LMFS principles. These safety principles (see table 1 for more information) and more relevant detailed SAP components with respect to NNB GenCo (SZC)’s independent nuclear assurance capability (as summarised above) have been considered, as follows.
   * MS.1 Leadership: (60)
     + Assurance: assurance should be provided at all levels and throughout all stages of the life of the nuclear power plant that safety is being maintained and improved (efficient INA).
   * MS.3 Decision making: (73)
     + Challenge: Active challenge should be part of decision making (effective INA).
3. ONR TAG NS-TAST-GD-080 (table 2, section 5 of the document) lists the following four core features that ONR would expect to see in a licensee organisation:
   * A challenge culture: a culture whereby receiving advice and challenge are an expected and accepted part of routine business;
   * An independent challenge capability: adequate independent challenge to, and oversight of, nuclear safety leadership, management and decision making at all levels of the organisation, and the establishment of an independent internal regulation function or suitable alternative;
   * Provision of nuclear safety advice: adequate nuclear safety advice which supports effective, proportionate nuclear safety leadership, management and decision making at all levels of the organisation; and
   * Adequate organisational capability for nuclear safety advice and independent challenge: appropriate organisation, staffing and management of the nuclear safety advice and independent challenge capabilities.
4. In my judgement, at this stage of the project NNB GenCo (SZC)’s activities as defined and documented, have proportionately developed the essential features of such arrangements which are described in international management systems standards, SAPs, TIGs and TAGs guides for independent nuclear assurance and advice.
   * 1. Status of Regulatory Issues
5. There are no outstanding regulatory issues in the assessed areas.
   * 1. Summary
6. NNB GenCo (SZC) provided evidence against ONR expectations for the OC6 – independent assurance and advice Sizewell C licensing topic stream as follows:
   * there was steady progress since the start of the OC6 – independent assurance and advice Sizewell C licensing topic stream
   * the INA strategy, mandate and plan are in place
   * benchmarking was performed.
   * self-assessment was performed – the actions will be either progressed through the FAP or monitored as a part of normal business
   * INA arrangements were updated to reflect NNB GenCo (SZC) roles
   * TPRs were reviewed.
   * there are examples of good challenge provided to the project, and the stakeholders found it helpful
   * an observation management tool will be deployed
   * environment is part of INA and good coaching was provided to the new member of the team
   * competent core team and leadership provided by the head of INA.
7. Key areas for further development of the INA function are as follows:
   * there is still potential conflict of roles as the head of licensing is the same person as the head of INA
   * formal reporting to the GenCo board is yet to be established
   * INA needs to increase its visibility and be better understood within the SZC project
   * we noted significant workload for the key members of INA team.
   * INA’s team and competency is still to expand
8. ONR assessment framework for Sizewell C licensing identified a series of organisational capability topic areas under which we gathered relevant information relating to the implementation and verification of NNB GenCo (SZC)’s arrangements. The question for the OC6 topic stream on independent assurance and advice was as follows.
   * Is there evidence of INA activities in your area and were they effective?
9. In my opinion, this assessment provides suitable and sufficient evidence to conclude that there is evidence of INA activities, and that they were effective.
   * 1. Conclusion
10. I consider NNB GenCo (SZC)’s independent assurance and advice function proportionately developed for the current stage of the SZC project given that there are no significant activities planned before FID.
11. Based upon the overall assessment findings in respect of independent assurance and advice, in my opinion NNB GenCo (SZC) has developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder. ONR will seek ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
    * 1. Recommendations for the Next Phase
12. There are several future challenges, where we will be seeking further confidence in NNB GenCo’s (SZC) activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
13. These areas will inform ONR’s intervention strategy and plans for the next phase of engagement.
    1. ONR Assessment Rating
14. In compiling this report, ONR’s specialist nuclear inspectors have conducted the assessments contained within the different sections of this report. Their professional judgement on the adequacy of the capability and arrangements for this stage of the project are captured at the end of each section and used to inform the overall conclusion.
15. The current governance arrangements described within the shareholder agreement are incompatible with our expectations for a licensee organisation, particularly around the level of control residing in the Holding Company. The current shareholder agreement for the development phase of the NNB GenCo (SZC) project places control of key policies relating to safety and security with NNB Holding Company limited, rather than the licence applicant - NNB Generation Company (SZC) limited, which is inconsistent with the expectations of ONR.
16. Based on these expectations the Holding Company may have an undue influence on NNB GenCo (SZC) Board decision making, that could potentially impact safety in the future. Therefore, it is unlikely that we would grant a licence to a company with these governance arrangements, without clear written commitments to address the shortfalls within an agreed timescale. Consequently, NNB GenCo (SZC) provided a commitment letter that sets out how they intend to control key policies relating to safety and security, which will be reflected in the future amended shareholder agreement.
17. Recognising the maturity of the project, ONR will be seeking ongoing confidence in NNB GenCo’s (SZC) activities (Ref. 27). We will also be seeking ongoing confidence in the delivery of the FAPs and related activities, which are intended to facilitate the continued development of the organisation and its arrangements prior to any step change in risk.
18. Taking these factors into account, the overall judgement is NNB GenCo (SZC) has not developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder due to the constraints within the current shareholder agreement.
19. In line with ONR guidance, presented in NS-TAST-GD-096, we therefore assign a RED assessment rating.

1. Conclusions and Recommendations
   1. Conclusions
2. This report presents the assessment findings of the organisational capability cornerstone. This supports a decision by the Chief Nuclear Inspector as to whether a Nuclear Site Licence should be granted to NNB GenCo (SZC).
3. The assessment has examined the corporate body/licensee organisation structure, governance arrangements, resources, competence and training, design authority, intelligent customer capability, internal challenge, supply chain management and arrangements for procurement of high integrity long-lead items.
4. The assessment is based on evidence from interventions and routine Level 4 engagements on specific topics and arrangements, including key project enabling activities. It also draws on the significant cross cutting interventions carried out by ONR as part of delivery of the ONR integrated intervention plan.
5. Based on the assessment, undertaken on a sampling basis, the following conclusions have been reached:
   * NNB GenCo (SZC) has adequately implemented its arrangements for compliance with the OC related licence conditions, namely: LC6, LC7, LC10, LC12, LC17 and LC36;
   * ONR has verified the OC considerations identified in the Sizewell C Licensing - ONR assessment framework (Ref. 6), have been adequately developed;
   * Regulatory issues that have been raised by ONR during the assessment process have been satisfactorily addressed, or there is an agreed plan in-place to address any outstanding issues;
   * NNB GenCo (SZC) has established comprehensive plans to further develop its capability and arrangements prior to any steps change in the risk profile;
   * NNB GenCo (SZC) has adequately established and documented (Ref. 12) a series of commitments for items that cannot be addressed until after the conclusion of ONR’s assessment; and
   * The current shareholder agreement for the development phase of the NNB GenCo (SZC) project places control of key policies relating to safety and security with Holding Company, rather than the licence applicant - NNB Generation Company (SZC) limited, which is inconsistent with the expectations of ONR.
6. Based upon the assessment detailed in this report, the overall judgement is GenCo has not developed its organisational capability and arrangements sufficiently to become a nuclear site licence holder, due to the constraints of the current shareholder agreement relating to safety and security.
   1. Recommendations
7. My recommendation is as follows:
   * I recommend that from an organisational capability perspective a nuclear site licence should not be granted to NNB GenCo (SZC) to construct and operate a nuclear power station at Sizewell C.
8. References
9. The Purpose and Use of Permissioning, NS-PER-GD-001 Revision 5, May 2021.
10. Safety Assessment Principles for Nuclear Facilities. 2014 Edition Revision 1, January 2020. ([www.onr.org.uk/saps/saps2014.pdf](http://www.onr.org.uk/saps/saps2014.pdf))
11. Compliance inspection - Technical Inspection Guides. ([Office for Nuclear Regulation (ONR) Compliance inspection - Technical inspection guides](https://www.onr.org.uk/operational/tech_insp_guides/index.htm))
12. Permissioning inspection – Technical Assessment Guides ([Office for Nuclear Regulation (ONR) Permissioning inspection - Technical assessment guides](https://www.onr.org.uk/operational/tech_asst_guides/index.htm))
13. Sizewell C new build project - ONR strategy up to licence grant, Revision 3, January 2022. (2021/26955)
14. Sizewell C Licensing - ONR Assessment Framework, Revision 3, January 2022. (2021/154838)
15. Corporate Governance Task Sheet, ONR-SZC-TS-20-012 Revision 1, August 2020. (2020/251787)
16. New Reactors Division - Contact Records - Sequential Numbering Spreadsheet - 2020-21. (2021/21966)
17. New Reactors Division - Contact Records - Sequential Numbering Spreadsheet - 2021-22. (2021/63428)
18. Intervention scope
19. Sizewell C – Governance through the organisation and the commitment letter, ONR-NR-CR-21-621, 21 February 2022 - 10 March 2022. (2022/19937)
20. Governance and Arrangements Commitment Letter from SZC to ONR, ONR-SZC-21672N, 24 March 2022. (2022/19719)
21. An overview of the Sizewell C Organisational Model, NNB-301-TEM-000016, July 2021. (2022/18415)
22. Technical Services Organisation Agreement, 197CA018-78EE-4AA2-AF1F-FAA0189BF927, 16 February 2022. (2022/14783)
23. NNB GenCo (SZC) Paper on SZC Organisational Model, 100943570, November 2021. (2021/87606)
24. Sizewell C - Level 4 Meeting - Governance for NNB GenCo Sizewell C and Shareholder Agreement Review, ONR-NR-CR-21-497, 24 November 2021 and 15 December 2021. (2021/92859)
25. NNB Holding Company (SZC) Ltd Board – Terms of Reference, 100960435 Revision 1. (2022/19723)
26. NNB Generation Company (SZC) Ltd Board – Terms of Reference, 100960437 Revision 1. (2022/19722)
27. NNB GenCo (SZC) Paper on SZC Governance Framework, 100979475 Revision 4, March 2022. (2022/23164)
28. Sizewell C Board Committees and Executive Management Committees, February 2022. (2022/19534)
29. SZC Delegations of Authority Manual, 100198219 Revision 6, February 2022. (2022/19535)
30. Risk, Opportunities, Trends & Change Terms of Reference, 100903456 Revision 12, December 2021. (2022/19533)
31. OECD Controlling Mind, NEA/NCRA/R (2011)4, April 2021. (2022/18768)
32. NNB GenCo (SZC) Board - skill mapping exercise, December 2021. (2022/18794)
33. NNB GenCo (SZC) Executive - skill mapping exercise, December 2021. (2022/18799)
34. NNB GenCo (SZC) Paper on Workforce Strategy Update - Employees, 100882696 Revision 1, April 2021. (2022/18609)
35. Sizewell C Licensing - Recommendations for the Next Phase, April 2022.
36. Organisational Development Task Sheet, ONR-EPR-TS-20-008 Revision 1. (2020/244412)
37. Intervention Scope document, I-OC3 for Organisational Development. (2021/88838)
38. Sizewell C Licensing - IOC3 Intervention - Organisational Development, ONR-NR-CR-21-584, 7-9 February 2022. (2022/16211)
39. SZC Project Execution Plan – 2022, 100645611 Revision 2. (2022/10163)
40. Presentation of the Project Delivery Organisation, 10096743, 21 January 2022. (2022/16215)
41. SZC Company manual, 100200192 Revision 4, June 2022. (2022/12138)
42. Review of the Company Manual v 4.0 against TAG 72, March 2022. (2022/16201)
43. Observation of the Organisation Capability Committee (OCC), 2 February 2022. (2022/14710)
44. Sizewell C - / Sizewell C Organisational Capability - LC36 and PC 1.1.1b, 4.3.5 Compliance Self-Assessment Report, 100969246 Revision 2, 8 February 2022. (2022/9211)
45. NNB GenCo (SZC) OC Forward Action Plan, 100980286 Revision 2, March 2022. (2022/25029)
46. Nuclear Baseline v2.0: Part A the nuclear baseline Statement, November 2021. (2021/84455)
47. Nuclear Baseline v2.0: Part B the organisation charts November 21. (2021/84457)
48. Nuclear Baseline v2.0: Part C the nuclear baseline database November 21. (2021/84459)
49. Nuclear Baseline v2.0 Vulnerability Assessment November 21. (2021/84458)
50. INA assessment of the nuclear baseline v 2.0. (2021/84454)
51. Assessment of Sizewell C’s Nuclear Baseline Statement v2.0 November 2021, December 2021. (2022/19214)
52. Sizewell C - Resource Strategy, 100969256 Revision 1, January 2022. (2022/9088)
53. Inspector’s note of meeting 2 February 2022 with Chief Information Officer function, part of the I-OC3 intervention, 10 February 2022. (2022/9740)
54. Inspector’s note of observation of the MoC Committee 2 March 2022, includes agenda and papers, 03 March 2022. (2022/14291)
55. Organisational Change Form, 100969235 Revision 1, February 2022. (2022/9111)
56. Management of Change procedure, NNB-302-PRO-000015 Revision 1.0, January 2022. (2022/9696)
57. Management of Organisational Change Assessment Form, 100969239 Revision 1. (2022/9199)
58. SZC Management of Change Committee, Terms of Reference, 100969266 Revision 1. (2022/9114)
59. Organisational Capability Task Sheet, ONR-EPR-TS-20-008 Revision 1. (2020/244412)
60. I-OC5 and I-OC6 - Intervention Scope - Training, SQEP and Appointments. (2021/52880)
61. Sizewell C (SZC) I-OC6 Intervention, ONR-NR-CR-21-643, March 2022. (2022/22986)
62. I-OC5 Training, SQEP and Appointments on 28 February and 1 March 2022, ONR-NR-CR-21-585, 25 March 2022. (2022/16234)
63. Sizewell C Training Policy, 100633818 Revision 1, 28 February 2022. (2022/13434)
64. Project Performance Committee Paper - Draft Training Strategy and Forward Action Plan, 10093049 Revision 1, March 2022. (2022/19299 and 2022/20632)
65. SZC - Self assessment report for LC10 and LC12, 100978267 Revision 1, 28 February 2022. (2022/17176)
66. Nuclear Baseline - SZC Training KPIs version 2.0, February 2022. (2022/17179)
67. Draft CDM Client Standard Document, 10069890, December 2021. (2022/17677)
68. Management Industrial Safety Contractor Evaluation, NNB-308-PRO-000083\_SZC Revision 1, September 2012. (2022/17677)
69. ONR review of four Organisational Learning RTPs, March 2022. (2022/19456)
70. Master Competency Framework, 100136692 Revision 4, 28 February 2022. (2022/13450)
71. Create Roles, Competencies and Development Actions, NNB-207-PRO-000002SZC Revision 1, November 2021. (2022/13485)
72. Management of Competency Guidance Note 2: Using the Competency Area Framework, NNB-OSL-GUI-000193 Version 1, July 2012. (2022/17235)
73. NB Role Training Profiles Priority List, 16022022, February 2022. (2022/14365)
74. Assess individual competency, NNB-102-PRO-000111SZC Revision 3, February 2022. (2022/13481)
75. Nuclear Baseline - SZC Training KPIs version 2.0, February 2022. (2022/14318)
76. NB Compliance report, Revision 1, 22 February 2022. (2022/14445)
77. SZC Training Delivery Programme Terms of Reference, January 2022. (2022/17187)
78. Organisational Capability Committee slides, 2 February 2022. (2022/17192)
79. Recruitment and appointment process, May 2021. (2021/36867)
80. Level 4 Training, SQEP and Appointments -Sizewell C meeting, ONR-NR-CR-21-075, 5 May 2021. (2021/39024)
81. SZC Welcome Pack. (2022/14688)
82. Board Onboarding pack and RTP130 (final drafts for approval), March 2022. (2022/17183)
83. SZC - Level 4 Meeting - Training, SQEP and Appointments - Sizewell C, ONR-NR-CR-21-328, 29 September 2021. (2021/72546)
84. NB Compliance report based on December 2021 nuclear baseline, February 2022. (2022/14445)
85. SZC - Regulatory Issue 9031 - evidence to downgrade to RI, March 2022. (2022/18154)
86. Quality including Management Systems - Task Sheet, ONR-SZC-TS-20-009, Revision 1. (2020/244425)
87. ONR Technical Inspection Guide NS-INSP-GD-017, LC17- Management Systems, Revision 7. (https://www.onr.org.uk/operational/tech\_insp\_guides/index.htm)
88. SZC Management System Manual, Version 2, 100645611. (2022/15388)
89. IMS 2022 Technical Development Priority Workstreams, Issue 1. (2022/15131)
90. IMS Governance Dashboard, 17 February 2022. (2022/15128)
91. IMS Review Panel (IRP) Meeting Minutes, 17 February 2022. (2022/15128)
92. SZC Quality Strategy - Delivery Plan (Pre-FID), Revision 2, 100961903. (2022/15388)
93. ONR-NR-CR-21-571 - SZC - LC6 Intervention – Geotechnical Records – Civil Engineering and External Hazards - 27 January 2022. (2022/12642)
94. Quality Forward Action Plan, March 2022. (2022/15131)
95. SZC - I-OC12 Effective Specifications - ONR-NR-CR-21-579, 15 - 17 February 2022. (2022/16802)
96. Procedure Adoption Plan, 100205512 Version 7. (2022/15128)
97. Procedure Adoption Form, 100948842 Version 3. (2022/17995)
98. SZC - I-OC10 SZC Safety Culture Development, ONR-NR-CR-21-548, 9 February 2022. (2022/13308)
99. Quality Strategy, 100700618 Version 3. (2021/49639)
100. Learning Report LR23377 - Transfer of responsibility for the Integrated Management System (IMS), March 2022. (2022/15386)
101. SZC Nuclear Baseline Organisational Chart, 100857408 Revision 15. (2022/15132)
102. SZC Recruitment Role Profiles – March 2022. (2022/15132)
103. Quality Organisation Roadmap, Version 1. (2022/15390)
104. IMS Review Panel - Terms of Reference, 100934564 Revision 1. (2022/15128)
105. SZC Quality Forum – Terms of Reference, 100966147 Revision 3. (2022/15128)
106. SZC Working Group – Terms of Reference, 100966143 Revision 2. (2022/15388)
107. SZC IMS Training Statistics – March 2022. (2022/14171)
108. SZC IMS: Procedure Author Briefing, 100977808 Revision 1. (2022/15128)
109. Quality Working Group Meeting Minutes, 24 February 2022. (2022/14167)
110. IMS Audit Programme 2022, 100910071 Revision 2. (2022/12803)
111. Organisational Capability Task Sheet for Independent Assurance and Advice (OC6) and Safety Culture Development (OC8), ONR-SZC-TS-20-010. (2020/244433)
112. Organisational Capability Committee Paper - SZC Culture Strategy, March 2022. (2022/20600)
113. Project Performance Committee Paper - SZC Organisational Learning Strategy, 100971065 Revision 1, 16 February 2022. (2022/19456)
114. NNB GenCo (SZC) Culture Forward Action Plan, March 2022. (2022/20602)
115. Safety culture competencies. (2022/20603)
116. Draft of Nuclear Safety Culture Requirements, CBL100100585 Revision 4. (2022/20605)
117. Learning Objectives for Generic Induction E-Learning, NNB-303-TCF-001729 Revision 0, November 2017. (2022/20606)
118. Learning Objectives for SZC Site Induction, January 2022. (2022/20608)
119. Draft of SZC Site Induction Presentation, December 2021. (2022/20609)
120. HPC General Foundation Part 1: Nuclear Safety Culture training presentation, 100881154 Revision 4. (2022/20610)
121. A message from HR Director on Pulse Check Survey for Sizewell C, November 2021. (2022/20613)
122. A message from HR Director on My EDF Survey for Sizewell C, November 2021. (2022/20614)
123. A message from Managing Director on My EDF Survey results for Sizewell C, November 2021. (2022/20615)
124. A message from HR Director on Pulse Check Survey for Sizewell C, February 2022. (2022/20616)
125. My EDF 2021 Survey results snapshot. (2022/20617)
126. Organisational Capability Task Sheet - ONR-SZC-TS-20-008 Revision 1. (2020/244412)
127. Sizewell C Licensing - IOC1 and IOC2 Interventions - Intelligent Customer, ONR-NR-CR-21-583, 31 January 2022. (2022/14827)
128. Intelligent Customer Policy, 100200193 Revision 2. (2022/6076)
129. IC Route map and Guidance document, 100855917 Revision 1, February 2021. (2021/58758)
130. IC Related Procedures (IMS) listed on SZC IC Route Map, 100855917. (2022/7731)
131. NNB GenCo (SZC) Culture Forward Action Plan, March 2022. (2022/25038)
132. Intelligent Customer Oversight Group Terms of Reference, Revision 1, November 2021. (2022/3780)
133. Inspectors note - observation of the Intelligent Customer Oversight Group (ICOG) meeting on 18 January 2022. (2022/7705)
134. Intelligent Customer Practitioner - Role Training Profile 29 for Level 3 IC practitioners (ICP). (2021/84348)
135. Training IC compliance spreadsheet - Intelligent Customer Level 2 and Level 3 training status of individuals holding Role 29 (Intelligent customer) on the Oct 21 Nuclear Baseline. (2022/11648)
136. SZC Contact Record Intelligent Customer Practitioner, ONR-NR-CR-20-1023, March 2021. (2021/21465)
137. Evidence for closure of L3 RI to ONR’s RI Review Meeting, March 2022. (2022/18146)
138. Safety Case Delivery Strategy (including GDA Assessment findings), ONR-SZC-TS-20-016. (2020/249234)
139. Licence Condition 14 Intervention, ONR-NR-CR-21-495, 29 November 2021. (2021/92443)
140. Licence Condition 20 Intervention, ONR-NR-CR-21-485, 30 November 2021. (2021/93242)
141. Organisational Capability Task Sheet for Supply Chain Management (including long lead items) OC7, ONR-SZC-TS-20-011 Revision 1 (2020/244463)
142. SZC Position Statement, July 2021. (2021/60482)
143. SZC Position Statement, December 2021. (2021/14713)
144. OC11 Supply Chain Management Arrangements, ONR-NR-CR-21-357, 12 & 13 October 2021. (2021/80444)
145. SZC incentives regime in the civils arena, particularly the Australian Government model of Alliancing, ONR-NR-CR-20-946, 11 February 2021. (2021/18339)
146. Meeting between SZC and ONR on SZC incentives framework, ONR-NR-CR-20-811, 16 December 2020. (2020/323605)
147. ONR observation of SZC’s hold point panel for the high integrity long-lead items procurement and feedback to Safety, Licensing and Assurance Director. ONR-NR-CR-21-457, 29 November & 3 December 2021. (2021/89829)
148. Observation of SZC High Integrity Long Lead Items Hold Point Panel Meeting, ONR-NR-CR-21-566, February 2022. (2022/13923)
149. ONR closure of Regulatory Issue 10575, 02 March 2022. (2022/13930)
150. Organisational Capability Task Sheet - ONR-SZC-TS-20-008 Revision 1. (2020/244412)
151. I-OC7 Organisational Learning - Intervention Scope document, January 2022. (2021/88841)
152. Contact Record for Intervention I-OC7, ONR-NR-CR-21-543, January 2022. (2022/8574)
153. Licence Condition 7 – Compliance Self-Assessment, 100966406 Revision 1, December 2021. (2022/5104)
154. Inspector Note - observation of Screening meeting, 19 Jan 2022. (2022/8427)
155. SZC Project Routine Screening Meeting - Terms of Reference, 100964474. (2022/2511)
156. SZC - Licensing Assessment: Licence Condition, ONR-NR-CR-22-002, 7 - 8 February & 8 March 2022. (2022/21499)
157. INA Strategy - Board Paper, 100866862, March 2021. (2022/19488)
158. Independent Nuclear Assurance Mandate, 100891942 Revision 1, November 2021. (2022/19489)
159. Independent Nuclear Assurance Strategy Update - Board paper, 100961842. (2022/19490)
160. INA 2021/2 Assessment Plan, 100911937 Revision 0, July 2021. (2022/19491)
161. Independent Oversight Benchmark, 100961877, December 2021. (2022/19492)
162. INA Self-Assessment (containing the Forward Action Plan), 100961840, December 2021. (2022/19495)
163. INA Management Tool (redacted sample), December 2021. (2022/19496)
164. Sizewell C Nuclear Safety Committee Terms of Reference, 100197655 Revision 1, June 2019. (2022/19498)
165. Provide Formal Advice from Assurance, NNB-202-PRO-000011\_SZC Revision 1, January 2022. (2022/19500)
166. Sizewell C Nuclear Site Licence Grant - Site and Licence Compliance, ONR-NRD-AR-22-009 Revision 0, May 2022. (2022/24148)
167. Nuclear Baseline and the Management of Organisational Change – A Good Practice Guide - published on behalf of the Nuclear Industry Safety Directors Forum, Issue 3, March 2017.
168. High reliability organisations, A review of the literature - HSL 2011 for HSE, RR899, Issue 1, 2011.
169. Documents and Records Management Policy, 101053675, November 2022. (2023/7569)
170. Leadership and Management for Safety - IAEA Safety Standards Series No. GSR Part 2, 2016.
171. Nuclear Site Licence Compliance Matrix, 100200248, Revision 5, March 2022. (2023/7570)

**Table 5: Relevant Safety Assessment Principles Considered During the Assessment**

|  |  |  |  |
| --- | --- | --- | --- |
| **SAP No** | **SAP Title** | | **Description** |
| MS.1 | Leadership | Directors, managers, and leaders at all levels should focus the organisation on achieving and sustaining high standards of safety and on delivering the characteristics of a high reliability organisation. | |
| MS.2 | Capable organisation | The organisation should have the capability to secure and maintain the safety of its undertakings. | |
| MS.3 | Decision making | Decisions made at all levels in the organisation affecting safety should be informed, rational, objective, transparent and prudent. | |
| MS.4 | Learning from experience | Lessons should be learned from internal and external sources to continually improve leadership, organisational capability, the management system, safety decision making and safety performance. | |

**Table 6: Relevant Technical Assessment Guides Considered During the Assessment**

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| --- | --- | --- | --- |
| **TAG No** | **TAG Title** | | **Description** |
| NS-TAST-GD-027 | Training and Assuring Personnel Competence | Revision 6.1, February 2022 | |
| NS-TAST-GD-048 | Organisational Change | Revision 6, September 2018 | |
| NS-TAST-GD-049 | Licensee Core Safety and Intelligent Customer Capabilities. | Revision 7, April 2019 | |
| NS-TAST-GD-072 | Function and Content of a Safety Management Prospectus (SMP) | Revision 4, August 2018 | |
| NS-TAST-GD-077 | Supply Chain Management Arrangements for the Procurement of Nuclear Safety Related Items or Services | Revision 6, July 2018 | |
| NS-TAST-GD-079 | Licensee Design Authority Capability | Revision 6, June 2020 | |
| NS-TAST-GD-096 | Guidance on Mechanics of Assessment | Revision 0, April 2020 | |
| NS-TAST-GD-080 | Challenge Culture, Independent Challenge Capability (including an Internal Regulatory function), and the provision of Nuclear Safety Advice | Revision 4, July 2018 | |

**Table 7: Relevant Technical Inspection Guides Considered During the Assessment**

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| --- | --- | --- | --- |
| **TIG No** | **TIG Title** | | **Description** |
| NS-INSP-GD-006 | Documents, records, authorities, and certificates | The purpose of this guidance is to facilitate a consistent approach to LC 6 compliance inspection and to provide assistance to inspectors carrying out their duties in this area. The guidance provides a framework for these inspection activities and should not be regarded as either exhaustive or mandatory. | |
| NS-INSP-GD-017 | Management Systems | The purpose of this guidance is to facilitate a consistent and effective approach to Licence Condition (LC) 17 compliance inspection. It describes ONR’s expectations for ‘adequate’ quality management arrangements | |
| NS-INSP-GD-070 | Safety Culture Guide for Inspectors | Revision 2, December 2019 | |

**Table 8: Relevant Standards and Guidance Considered During the Assessment (in addition to Table 6 and 7 contents)**

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| --- | --- | --- | --- |
| **Standard No** | **Standard Title** | | **Description** |
| N/A | Safety Assessment Principles (SAPs) | ONR, CM9 2019/367414 | |
| BS EN ISO 9001: 2015 | Quality management systems—Requirements | ISO 9001:2015 specifies requirements for a quality management system when an organization:  a) needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, and  b) aims to enhance customer satisfaction through the effective application of the system, including processes for improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.  All the requirements of ISO 9001:2015 are generic and are intended to be applicable to any organization, regardless of its type or size, or the products and services it provides | |
| IAEA GSR Part 2 | Leadership and Management for Safety | This Safety Requirements publication is to establish requirements that support Principle 3 of Fundamental Safety Principles, in relation to establishing, sustaining, and continuously improving leadership and management for safety, and an effective management system. This is essential in order to foster and sustain a strong safety culture in an organization. Another objective is to establish requirements that apply Principle 8, which states that “All practical efforts must be made to prevent and mitigate nuclear or radiation accidents.” | |
| N/A | Licensing Nuclear Installations | ONR, Revision 6, November 2021  https://www.onr.org.uk | |
| N/A | Independent Oversight - Good Practice Guide | Issue 2, December 2018.  Safety Directors Forum – Independent Oversight Working Group | |
| N/A | Nuclear Baseline and the Management of Organisational Change – A Good Practice Guide | Issue 3, March 2017, published on behalf of the Nuclear Industry Safety Directors Forum  https://www.nuclearinst.com/write/MediaUploads/SDF%20documents/OCWG/Nuclear\_Baseline\_and\_Management\_of\_Organisational\_Change\_GPG.pdf | |
| RR899 | High reliability organisations, A review of the literature,  HSL for HSE | 2011  https://www.hse.gov.uk/research/rrhtm/rr899.htm | |
| IAEA Safety Guide NS-G-2.8 | Recruitment, Qualification and Training of Personnel for Nuclear Power Plants | Vienna 2022 | |
| ONR-OPEX-GD-001 Revision 7 | Notifying and Reporting Incidents and Events to ONR | ONR Guide | |
| N/A | A Harmonized Safety Culture Model | IAEA Working Document, May 2020 | |
| IAEA SRS 74 | Safety Culture in Pre-Operational Phases of Nuclear Power Plant Projects | IAEA 2012 | |

1. CM9 revision to be identified upon completion of activity and incorporation of any changes to document. [↑](#footnote-ref-2)
2. Where required in accordance with ONR How2 BMS Document NS-PER-GD-016 [↑](#footnote-ref-3)
3. Hard-copy of document signed-off, CM9 version updated with authors / approver / acceptor names and dates and record finalised [↑](#footnote-ref-4)
4. Figure correct as of April 2022 [↑](#footnote-ref-5)